



## ***Documented Briefing***

# **Asbestos Litigation Costs and Compensation**

*An Interim Report*

Stephen J. Carroll

Deborah Hensler

Allan Abrahamse

Jennifer Gross

Michelle White

Scott Ashwood

Elizabeth Sloss

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**RAND**  
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1700 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

1200 South Hayes Street, Arlington, VA 22202-5050

201 North Craig Street, Suite 202, Pittsburgh, PA 15213-1516

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## PREFACE

The RAND Institute for Civil Justice (ICJ) began analyzing asbestos litigation with an initial study in the early 1980s. That study was the first to examine the costs of and compensation paid for asbestos personal injury claims. It was followed by other research that addressed the courts' responses to asbestos litigation and a number of studies of mass tort litigation in general.

In spring 2001, the ICJ initiated a new study on asbestos litigation, now the longest-running mass tort litigation in U.S. history. In this study, ICJ researchers are revisiting the issues raised in the initial RAND study. How many claims have been filed and for what injuries? How much is being spent on the litigation and what is the balance between the compensation paid, claimants and the costs to deliver it? What economic costs does the litigation impose on defendants and on the economy as a whole? What are the future prospects for the litigation? Are there strategies for resolving asbestos suits that would be more efficient and more equitable?

ICJ staff provided preliminary answers to these questions to the staff of the Senate Judiciary Committee and the House Judiciary Committee of the U.S. Congress in briefings on August 13 and 14, 2001. That briefing was documented in *Asbestos Litigation in the U.S.: A New Look at an Old Issue* (RAND DB-362.0-ICJ, August 2001). Since then, ICJ staff have conducted extensive analyses of data, including confidential data provided by various participants in the litigation as well as published data and information gathered from interviews with plaintiff and defense attorneys, insurance-company claims managers, financial analysts, and court-appointed neutrals. This documented briefing builds on the previous briefing and includes the results of more detailed analyses.

The final report on the project will document the analyses we conducted to arrive at the results presented in this briefing. It will also analyze alternatives to the current approach to asbestos litigation in terms of their likely effects on major stakeholders in the litigation. We expect to publish the final report in early 2003.

For information about the Institute for Civil Justice contact:

Robert Reville, Acting Director  
RAND, Institute for Civil Justice  
1700 Main Street  
Santa Monica, CA 90407-2138  
Tel: (310) 393-0411 x6786  
Fax: (310) 451-6979  
Email: Robert\_Reville@rand.org

## **THE RAND INSTITUTE FOR CIVIL JUSTICE**

The mission of the RAND Institute for Civil Justice is to improve private and public decisionmaking on civil legal issues by supplying policymakers and the public with the results of objective, empirically based, analytic research. The ICJ facilitates change in the civil justice system by analyzing trends and outcomes, identifying and evaluating policy options, and bringing together representatives of different interests to debate alternative solutions to policy problems. The Institute builds on a long tradition of RAND research characterized by an interdisciplinary, empirical approach to public policy issues and rigorous standards of quality, objectivity, and independence.

ICJ research is supported by pooled grants from corporations, trade and professional associations, and individuals; by government grants and contracts; and by private foundations. The Institute disseminates its work widely to the legal, business, and research communities, and to the general public. In accordance with RAND policy, all Institute research products are subject to peer review before publication. ICJ publications do not necessarily reflect the opinions or policies of the research sponsors or of the ICJ Board of Overseers.

## **SUMMARY**

### **BACKGROUND**

Asbestos litigation is the longest running mass tort in U. S. history. Within the past few years, there have been sharp increases in the number of asbestos claims filed annually, the number and types of firms named as defendants, and the costs of the litigation to these defendants. These trends have led many people to question whether compensation is being divided among claimants fairly and in proportion to need, and whether responsibility for paying compensation is being allocated among defendants fairly and in proportion to culpability. Moreover, the system is costly to administer, may impose indirect costs on the economy, and may leave little or no funds to pay future asbestos victims.

### **STUDY PURPOSE AND APPROACH**

This study is a comprehensive look at the dimensions of asbestos litigation today: How many claims have been filed? By whom? Against whom? For what kinds of conditions? At what cost? With what economic effects? If current trends continue, what will be the future costs of the litigation? The analysis is intended to provide the best estimates available of present and future consequences of the litigation so that policymakers can address the key question: whether the tort system as it now operates is the best way to resolve asbestos claims.

One of the reasons for such a study is that information on asbestos litigation is highly dispersed and usually confidential. There is no national registry of asbestos claimants. Federal courts collect data on asbestos cases, but most claims are filed in state courts, which do not report such information. Most of the data is gathered by individual defendants and insurers with a stake in the litigation. RAND researchers gained access to a good deal of this data, as well as some proprietary studies, from participants on both sides of the litigation—access that was granted under conditions of utmost confidentiality. The study team also drew upon RAND's previous research on asbestos, other analyses that are publicly available, and extensive interviews with dozens of participants with different perspectives on the litigation. The researchers have synthesized all these sources, acknowledging that they are providing only best estimates because the data are still far from complete. This briefing presents interim research findings.

## ORGANIZATION

After an introduction to the study, the briefing describes the history of the litigation in an effort to explain why it has reached the scale it has today, why there are concerns about its future growth, and why it has become a matter of policy concern. It then describes the dimensions of the litigation through the year 2000, including the total number of claims, the changing composition of claims, the number of defendants and the spread of litigation across industries, the total costs of the litigation to insurers and defendants, and the potential effects of the litigation on the U.S. economy today and in the future. Finally, the briefing outlines the policy alternatives to the current litigation regime.

## KEY FINDINGS

### *Claiming behavior:*

- Over 600,000 people have filed claims, typically against dozens of defendants, for asbestos-related personal injuries through the end of 2000.
- Annual filings have risen sharply in the last few years.
- Increasing claims for nonmalignant injuries explain the recent growth in the asbestos caseload.
- The number of mesothelioma cases filed annually has been rising slowly over this period, but they represent a tiny fraction of all claims.
- Although available claims data do not distinguish consistently among different kinds of nonmalignant claims, there is widespread agreement that a majority of the claimants without cancer are functionally unimpaired, meaning that their asbestos exposure has not so far affected their ability to perform activities of daily life.
- Cases migrated to different states and venues in the late 1990s. Five states—Mississippi, New York, West Virginia, Ohio, and Texas—which accounted for only 9 percent of the cases filed before 1988 handled 66 percent of filings between 1998 and 2000.

### ***Defendants:***

- Over 6,000 companies have been named as defendants.
- The litigation has spread far beyond the asbestos and building products industries. The list of defendants now ranges across 75 out of 83 different types of industries in the U.S. Although only a few firms are involved in certain industries, the litigation has spread to touch almost every type of economic activity in the U.S.
- Bankruptcies are becoming more frequent: a total of 16 bankruptcies were filed in the 1980s, 18 in the 1990s, and 22 between January 2000 and spring 2002.

### ***Compensation and Costs:***

- A total of \$54 billion has already been spent on asbestos litigation.
- Transaction costs have consumed more than half of total spending.
- About 65 percent of compensation has gone to nonmalignant claimants.
- Compensation for mesothelioma claims has risen sharply since 1993.
- Estimates of the number of people who will file claims in the future—and the costs of those claims—vary widely, but they are all extremely high. All accounts agree that, at best, only about half the final number of claimants have come forward. At worst, only one-fifth of all claimants have filed claims to date. Estimates of the total costs of all claims range from \$200 to \$265 billion.

## **POLICY IMPLICATIONS**

For asbestos compensation, the tort system itself is falling short of its principal objectives: to properly compensate injured victims for their losses, to deter defendants from injuring others, and to provide individualized corrective justice. Is there a better way to resolve asbestos claims fairly and efficiently? Despite the criticisms of the current asbestos litigation regime, many argue that it is the best feasible approach to assuring compensation for those injured by asbestos exposure. Under the laws of most jurisdictions, functionally unimpaired claimants who show clinical signs of asbestos exposure have compensable injuries. Whether the system should continue to compensate these claimants is the central issue in the current policy debate over asbestos litigation.



Maintaining the status quo means assigning a substantial compensation role to the bankruptcy trusts. Some view bankruptcy as a viable alternative to the tort system in that it can provide compensation at modest transaction costs. However, these benefits come at a high price for the plaintiffs, who typically receive only a tiny fraction of their claim's value, and for investors whose equity often disappears entirely. Alternatives to the status quo that have been proposed include changes in substantive doctrines, changes in procedural rules, and creation of an administrative compensation program. We are continuing to analyze options for reform and will present the results in our final report.



***Asbestos Litigation Costs  
and Compensation:  
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A3823-1 08/02 RAND



## ***Trends in Asbestos Litigation Are Raising Policy Concerns***

- **Asbestos litigation began to attract policy attention in the early 1980s**
- **Settlement agreements in the late 1980s led many to believe litigation was “manageable”**
- **But rapid increases in the number of claims and costs have reawakened interest**
- **Litigation appears likely to continue**
- **Is there a better way of compensating asbestos victims?**

A3823-2 08/02 RAND

After the 1973 *Borel* decision (*Borel v. Fibreboard*, Fifth Circuit, U. S. Court of Appeals, 1973) found asbestos manufacturers strictly liable to workers injured as a result of exposure to their product, increasing numbers of product liability claims against asbestos manufacturers began to flow into the courts. By the early 1980s, well over 20,000 claimants had initiated lawsuits alleging injuries from exposure to asbestos. The growing volume of this type of litigation began to attract the attention of public policymakers.

Many of those involved in asbestos litigation devised procedures to streamline the process and reduce the burdens and costs they faced. Courts developed formal and informal approaches to managing asbestos litigation. A series of court decisions resolved most of the coverage disputes between defendants and insurers. Many defendants chose not to aggressively contest liability and instead negotiated settlements of large numbers of cases with leading plaintiff attorney firms. These agreements typically called for settling hundreds or thousands of cases per year at amounts specified in administrative “schedules” that reflected differences in injury severity and other characteristics deemed to affect the value of cases. Asbestos litigation continued to be a critical concern for the firms frequently named as defendants, but there were only a few dozen firms in this position. Most observers tended to view asbestos litigation as “manageable.” Asbestos litigation became a lower priority on the national political agenda.

However, the last few years have seen sharp increases in the number of asbestos claims filed annually, the number of firms named as defendants, and the costs of the litigation to these defendants. These increases have led to growing burdens on the courts, greater costs to the firms named as defendants, and greater numbers of firms filing for bankruptcy. Taken together, these trends raise a number of policy concerns, including whether there will be sufficient funds available to adequately compensate future claimants.

Is there a better way to resolve asbestos claims fairly and efficiently? Many observers are calling for reform, but there is little agreement on how to proceed.



## **To Address These Concerns, Policymakers Must Know the Dimensions of the Litigation**

- |                         |   |
|-------------------------|---|
| <b>Claims</b>           | <ul style="list-style-type: none"><li>• How many claims are there and of what type?</li><li>• Who are the defendants?</li></ul>               |
| <b>Costs</b>            | <ul style="list-style-type: none"><li>• How much is being spent on litigation?</li><li>• How much of that goes to claimants?</li></ul>        |
| <b>Economic effects</b> | <ul style="list-style-type: none"><li>• What is the extent of asbestos bankruptcies?</li><li>• What are the broad economic effects?</li></ul> |
| <b>Future outlook</b>   | <ul style="list-style-type: none"><li>• Where is this all headed?</li></ul>   |

***The RAND study is addressing these questions***

A3623-4 08/02 RAND

A clear understanding of the dimensions of the litigation is essential to the design of appropriate means for resolving asbestos claims. How many claims are being filed? By whom? Against whom? For what injuries? How much are claimants recovering? How many bankruptcies have been caused by asbestos litigation, and what are the overall economic effects of the litigation? More generally, what does the future hold?

Asbestos litigation poses challenges for plaintiff attorneys seeking compensation for asbestos injury victims, for defendants who must respond to the litigation while protecting shareholders' interests, for insurers who must cover the losses, and for financial institutions attempting to accurately assess the magnitude of current losses and future liabilities. Because of the number of people exposed to asbestos in the U.S., the injuries they have incurred, the financial losses attendant to these injuries and the ensuing litigation, and the potential economic impact of this litigation, asbestos litigation also poses unique challenges for the civil justice system.

This RAND Institute for Civil Justice study is intended to provide objective data and analysis to stakeholders and policymakers so that they can address the key policy questions: How well is the current process working? Can it be improved?



## ***Few Data Are Available***

- **No state or national registry of asbestos claims or lawsuits exists**
- **Most claims involve multiple defendants, each of which keeps its own records**
- **Claimants receive money from multiple sources over long periods of time**
- **Many data sources are not public**

A3823-5 08/02 RAND

It is difficult to understand the challenges posed by asbestos litigation and develop appropriate responses to them because so few data are available. There is no national registry of asbestos claimants. Some claims are not filed formally in court as lawsuits. Federal courts report the number of asbestos lawsuits filed, but in recent years most lawsuits have been filed in state courts, which do not routinely identify and report annual asbestos lawsuit filings.

The typical asbestos claimant brings a claim against many defendants—typically several dozen—each of which generally settles claims separately and keeps its own records. Any one defendant knows about the claims against it and its settlements, but it usually does not know how much other defendants are paying on a claim. Claimants may receive money from settlements over a long period of time. They may settle with some defendants today and other defendants next year and still others later on down the line.

Because so many conflicting interests and so much money are involved, almost all the data are viewed as highly sensitive and confidential. So, answers to simple questions such as, How many claims are there? and What does the litigation cost? are not readily available.



## ***The ICJ-Analyzed Asbestos Litigation in 1982***

	<b>1982</b>
<b>Number of claimants</b>	<b>21,000</b>
<b>Number of defendants</b>	<b>300</b>
<b>Total costs up to 1982 (nominal \$)</b>	<b>\$1 B</b>
<b>Bankruptcies</b>	<b>3</b>
<b>Estimated future costs (nominal \$)</b>	<b>\$38 B</b>

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Those concerned with asbestos litigation were confronted with a similar problem in the early 1980s. A variety of stakeholders and policymakers had deep concerns about asbestos litigation, but data limitations impeded analysis of the problem. Then, as now, the ICJ was asked to identify the dimensions of the litigation, and it published a series of asbestos studies in the 1980s.

The results were considered shocking. RAND's report on the status of the litigation in 1982 (Kakalik et al., 1983) observed that about \$1 billion in compensation and litigation expenses had been spent by the end of 1982 on more than 21,000 open and closed asbestos product liability claims. Three major corporations had filed Chapter 11 bankruptcy petitions, identifying the costs of asbestos litigation as the principal reason for the filing. Respected analysts were predicting that the future costs of asbestos litigation could reach \$38 billion.



## ***This Research Seeks to Update the Earlier Study***

	1982	Today
Number of claimants	21,000	?
Number of defendants	300	?
<hr/>		
Total costs to date (nominal \$)	\$1 B	?
<hr/>		
Bankruptcies	3	?
<hr/>		
Estimated future costs (nominal \$)	\$38 B	?

A3823-7 08/02 RAND

Now we are asking the same questions: How many claims are being filed? By whom? Against whom? For what injuries? How much is all this costing and where is the money going? How many bankruptcies have been caused by asbestos litigation, and what are the overall economic effects of the litigation? More generally, what does the future hold if present trends continue?





## ***How We Dealt with Data Limitations***

- **Built on our previous asbestos and mass tort research**
- **Used publicly available data**
- **Obtained internal reports from investment and insurance analysts**
- **Acquired confidential data from litigation participants**
- **Conducted interviews with litigation participants**

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This analysis draws on data obtained from a wide variety of sources. RAND's previous research on asbestos and other mass toxic tort litigation has been widely cited in the public arena (Kakalik et al., 1983; Kakalik et al., 1984; Hensler et al., 1985; Hensler, 1992; Peterson & Selvin, 1991; Hensler & Peterson, 1993; Hensler, 1995; Hensler et al., 2000). We have drawn on the knowledge we acquired in these previous studies to establish historical and interpretative contexts for new information.

The nature of asbestos litigation and the issues it raises have generated considerable public documentation on the course of the litigation. We've collected publicly available data from a variety of sources—ranging from asbestos litigation reporters to corporations' SEC filings. Where we have found inconsistencies, we have either noted them or have not made use of the data. When corporations attribute filing for Chapter 11 to asbestos litigation, they often report the number of asbestos claims filed against them in their bankruptcy petitions. We obtained these data as well. Asbestos bankruptcy trusts—entities that are formed to pay asbestos claims after reorganization—typically report the number of claims filed against them to the court that has jurisdiction over the bankruptcy. All of these records are public, although they are not always easy to locate.

For example, many of the financial analysts and insurance analysts have conducted their own studies of asbestos litigation. If they used proprietary data

in their studies, we asked the analysts to review their analytic methods with us. Most of the analysts we interviewed were willing to discuss their approach with us and show us how they arrived at their results, even if they could not share their data with us. We have relied on only those studies that appeared to be sound in terms of the standards listed above.

We also obtained confidential data from many participants in the litigation. In each instance, we specified the data we sought and conducted sufficient investigation (for example, comparing information from multiple sources) to assure ourselves that the data provided to us were reliable. We used only data that we confirmed with other data or with other participants in the litigation.

We obtained data, on a confidential basis, on each of the claims brought against almost 200 defendants and trusts through 2000. A substantial number of these defendants have been prominent in the litigation and had received claims from tens of thousands, in some cases, hundreds of thousands, of people. Because asbestos claimants typically file claims against multiple defendants, the vast majority of the claimants on the list for one defendant also appeared on the list for another defendant. Accordingly, we could compare the information we obtained for one defendant to the information we obtained for other defendants to determine the reliability of the data. In the analyses reported below, we generally used only those data that proved reliable in the sense that data from different defendants agreed. We combined the data on individual claims.

We also obtained aggregate annual data on indemnity payments and defense costs for a large number of defendants. These data were available for some defendants from the early 1980s. In other cases, we were only able to obtain data for the last few years. In all, the data include more than 60,000 defendant-year observations. Almost all of these defendants had some insurance and insurance policies have coverage limits. Because there is always the possibility that a defendant and insurer can dispute whether a coverage limit has been reached, both defendants and insurers have strong incentives to maintain accurate data on indemnity payments and loss adjustment costs. Accordingly, we believe these data are reasonably accurate.

Finally, we conducted more than 60 interviews with key participants in the litigation, including plaintiff attorneys, corporate counsel, outside defense counsel, insurance company claims managers, investment analysts, and court-appointed neutrals. All of these interviews lasted at least one hour and several took considerably longer. The picture of the current state of asbestos litigation that emerged from these interviews was remarkably consistent. Where interviewees had sharply different views of the litigation than others, they noted that themselves and discussed why their perceptions differed. All of the

Interviews were conducted under promises of confidentiality to encourage candor, and we explained the purposes of the study and our general approach to all of the interviewees.



## *Outline*

- How did we get here?
- Where are we today?
- Is there a better way?

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## ***How Did We Get Here?***

- Widespread occupational exposure led to many injuries
- Mass litigation techniques proved successful for plaintiffs
- Efficiency efforts promoted additional litigation
- Global settlements failed
- The litigation became increasingly concentrated in a few law firms
- Over time cases migrated to jurisdictions favorable to plaintiffs

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## ***Widespread Occupational Exposure***

- **Asbestos is abundant, inexpensive, versatile**
- **Failure to warn of its risks and inadequate protection increased exposure**
- **Estimated 27 million U.S. workers in high-risk industries and occupations exposed, 1940-1979**
- **Unknown numbers of workers exposed**
  - **In other industries and occupations**
  - **Since 1979**

A3823-13 06/02 RAND

Asbestos is abundant and inexpensive to mine and process. Because it is strong, durable, and has excellent fire-retardant capability, asbestos was widely used in industrial and other work settings, as well as in residential settings, through the early 1970s. Asbestos consumption in the United States peaked in 1973 and then dropped dramatically over the next several decades (Alleman & Mossman, 1997).

Before the 1970s, large numbers of American workers were exposed to asbestos, some for long periods of time and/or at high levels. With the passage of the Occupational Safety and Health Act (OSHA) in 1970, increasingly strict safety regulations governing workplace exposure to asbestos were put in place. In 1989, the EPA proposed banning all products containing asbestos, but as a result of a decision by the Fifth Circuit Court of Appeals (*Corrosion Proof Fittings v. E.P.A.*, 947 F.2d 1201 [5th Cir. Oct 18, 1991] [No. 89-4596]), opinion clarified (Nov 15, 1991), rehearing denied (Nov 27, 1991), that ban was set aside. After the court overturned the EPA's proposed rule, certain products containing asbestos remained banned and no new uses of asbestos (i.e., in products that had not historically contained asbestos) were permitted. However, some uses of asbestos remain legal in the United States. In material prepared for consumers, the EPA notes: "EPA does NOT track the manufacture, processing or distribution in commerce of asbestos-containing products" (U.S. Environmental Protection Agency [1999]). Exposure to naturally occurring asbestos, which may also cause disease, is generally not regulated (Renner, 2000).

That workplace exposure to asbestos can be dangerous was known well before World War II (Brodeur, 1985; Tweedale, 2000). Some asbestos manufacturers that were aware of the dangers of exposure to asbestos did not warn their employees of the risks of injury that stem from exposure to asbestos fibers, nor did they provide adequate protection for them (Brodeur, 1985; Castleman, 1996). Indeed, some asbestos manufacturers lobbied against stricter regulation of asbestos exposure in the workplace in the 1950s (Brodeur, 1985). It was these failures of public and private policy decades ago that set the stage for the current litigation.

The groundbreaking work on asbestos exposure-induced disease among U.S. workers was conducted by Dr. Irving Selikoff at the Mt. Sinai School of Medicine in New York (Selikoff, Hammond & Churg, 1964; Selikoff, Churg & Hammond, 1965; Selikoff & Lee, 1978). Litigators still use Selikoff and associates' work as the standard references on occupational exposure to asbestos, although the leading reference, Nicholson, Perkel & Selikoff (1982), estimated excess mortality due to asbestos-related disease only for workers exposed through 1979. Few epidemiological studies aimed at projecting total asbestos-related disease have been published since the Nicholson, Perkel & Selikoff study was published in 1982, and most of the more recent studies deal with asbestos exposure outside the United States (e.g., Banaie et al., 2000; Kjaergaard & Andersson, 2000; Magnani et al., 2000; Peto et al., 1999). The more recent epidemiological projections of asbestos-related disease in the United States have been limited to mesothelioma (Price, 1997). Litigation experts have used the Nicholson, Perkel & Selikoff (1982) estimates, more recent studies, and other data to project the number of future asbestos claims (Manville Personal Injury Settlement Trust, 2001; Stallard, 2001).

Nicholson, Perkel & Selikoff identified U.S. industries in which workers were at significant risk of asbestos exposure. These included *primary manufacturing*, including asbestos products (such as friction products, pipe and sheet, asbestos textiles, floor tiles, roofing, insulating and other building materials), gaskets, packing and sealing devices, and building paper and building board mills; *secondary manufacturing*, including heating equipment, boiler shops, industrial furnaces and ovens, and electric housewares and fans; *shipbuilding and repair*; and *construction*, including general contractors in residential and non-residential building construction and water, sewer, pipeline, communication and power line construction. They also identified workers in certain occupations who were at significant risk of asbestos exposure. Those workers included asbestos and insulation workers, automobile body repairers and mechanics, engine room personnel in the maritime industry, maintenance employees in chemical and

petroleum manufacturing and in the railroad industry, stationary engineers, stationary firemen, and power station operators. In all, Nicholson, Perkel & Selikoff they estimated that approximately 27.5 million workers in these industries and occupations had been exposed to asbestos from 1940 to 1979.

In recent years, workers from industries and occupations not included in Nicholson, Perkel & Selikoff's analysis have begun to file claims for asbestos-related injury. The etiology of these claims is sharply disputed. Some litigators on both the plaintiff and defense sides argue that most workers in these industries have not actually suffered significant asbestos exposure or injury and they should not be compensated for asbestos-related injury. Other litigators argue that Nicholson, Perkel & Selikoff simply focused on the potential for asbestos exposure and asbestos-induced disease in high-risk industries and occupations and ignored the risk of exposure in other industries. We have not been able to find any epidemiological study that has systematically investigated asbestos exposure and incidence of asbestos-induced disease that includes all industries and occupations in the U.S., although some analysts have examined patterns of legal claiming by industry (Manville Personal Injury Settlement Trust, 2001). Although some studies project cases of disease, not deaths (e.g., Walker et al. [1983] and Price [1997]), no study has provided a reliable estimate of how many people are sick at a given point in time as a result of occupational exposure to asbestos.





## ***Many Injuries***

- **More than 225,000 premature deaths estimated through 2009**
- **Variety of diseases**
  - **Mesothelioma**
  - **Other cancers, particularly lung cancer**
  - **Asbestosis**
  - **Pleural thickening or plaques**

A3623-16 08/02 RAND

The widespread exposure to asbestos led to what has been termed "the worst occupational health disaster in U. S. history" (Cauchon, 1999, p. 4). Nicholson, Perkel & Selikoff (1982) estimated that more than 225,000 "excess (i.e., premature) deaths" due to asbestos-related cancers would occur from 1985 through 2009 as a result of exposure to asbestos from 1940 through 1979. This number does not include deaths resulting from severe asbestosis, or from exposure to asbestos in other occupations and industries, or from post-1979 exposure to asbestos. Although Nicholson, Perkel & Selikoff's estimates are widely cited, they were disputed by some epidemiologists at the time of their publication. The Nicholson, Perkel & Selikoff estimates were derived from a study conducted by Irving Selikoff under a contract with the U.S. Department of Labor. A study conducted by Walker et al. (1983) projected many fewer excess cancer deaths due to exposure; it was conducted under contract to the Johns-Manville Corporation and was itself subject to criticism.

Estimating the numbers of asbestos-related deaths and diseases is complicated by the long latency periods associated with asbestos injuries. Generally, 20 to 40 years elapse between first exposure to asbestos and disease manifestation. For example, the Manville Trust found that the average year of first exposure to asbestos by claimants who filed a claim with the Trust during the 1990s was generally more than 40 years earlier (Claims Resolution Management Corporation, 2001, p. 20). Although 20 years of the projection period used by

Selikoff and Walker have elapsed, the projections from these studies are still difficult if not impossible to validate using actual data.

A variety of diseases have been linked to asbestos exposure as described below.

*Mesothelioma* is a cancer of the lining of the chest or abdomen. Asbestos is the only demonstrated cause of mesothelioma. However, some mesothelioma cases are not traceable to an asbestos exposure. The disease is regarded as inevitably fatal, usually within a year or two of diagnosis. It can occur even with a relatively low level of exposure. The incidence of mesothelioma is tracked in selected areas of the United States by the U.S. Centers for Disease Control (National Cancer Institute), providing a reliable source of information for epidemiological research.

A number of *other cancers* have been linked to asbestos, although they all may have other causes besides asbestos exposure. Aside from mesothelioma, lung cancer is the most frequently claimed malignant disease. There is general agreement that asbestos can cause lung cancer. The risk of lung cancer can be exacerbated by other factors, most notably smoking. There were high rates of smoking in the blue-collar industries where asbestos exposure was particularly high. In lung cancer cases, defendants often dispute plaintiffs' allegations that their cancer is attributable to asbestos exposure, rather than smoking. Other cancers asserted by asbestos claimants include leukemia, and cancers of the bladder, breast, colon, esophagus, kidney, larynx, lip, liver, lymphoid, mouth, pancreas, prostate, rectum, stomach, throat, thyroid, and tongue. The relationship of other cancers to asbestos is a subject of contention; defendants frequently dispute the causality of other cancer claims. No U.S. government agency monitors the incidence of asbestos-related cancers other than mesothelioma.

*Asbestosis* is a scarring of the lung tissue resulting from the effects of inhaled asbestos fibers. Technically, to meet the criteria for a clinical diagnosis of asbestosis, there must be decreased pulmonary function (American Thoracic Society, 1986). Asbestosis is a chronic disease that can be debilitating and is sometimes, but not usually, fatal. However, asbestosis can be asymptomatic or only mildly impairing. Severe asbestosis requires extensive high-level exposure to asbestos, which has not been prevalent in the U.S. for several decades. The National Institute for Occupational Safety and Health (NIOSH) publishes limited data on deaths due to asbestosis, but no U.S. government agency monitors the prevalence of asbestosis.

*Pleural thickening* or *plaques* is a scarring of the pleura, the membrane that lines the inside of the chest wall and covers the outside of the lung. People

exposed to asbestos may have plaques with no indications of diminished pulmonary function and may never suffer any functional impairment as a result of their exposure.

Because asbestos-related diseases have long latency periods, indicators of disease and impairment may not appear for many years. Some people who are first diagnosed with a non-disabling condition may develop more serious diseases some time in the future, but others will never do so.



## ***Controversy over Injury and Impairment***

- **Many say most recent claimants are “unimpaired”**
- **Others say relevant issue is whether claimants satisfy legal criteria for injury**
- **Controversy turns on value judgments and medical criteria**
- **Studies suggest that most claimants without malignancies are not currently functionally impaired**

A3823-19 08/02 RAND

One of the most hotly contested issues in asbestos litigation is the extent to which claimants are affected by their exposure: that is, how sick or “impaired” they are. Some commentators say that many claimants are “not sick” and, because the funds available to compensate asbestos claimants are limited, they should not be compensated so that available funds can be directed toward those who “are sick.” “[In asbestos litigation,] ... plaintiffs with no physical impairment receive windfall settlements that reduce the amount of funds available to pay the claims of those who are truly sick or who may become truly sick” (Rothstein, 2001, p. 2).

Others strongly disagree with this position, arguing that the law in all 50 states requires that claimants are entitled to compensation only if they have suffered an injury or disease. It follows that, because these claimants have been compensated, they must have been injured, and there is no basis for suggesting that they are not entitled to compensation.

Value judgments are clearly at the heart of this debate. However, the meaning of the word “impaired” is also at issue. The American Medical Association’s definition of impairment is synonymous with injury: Impairment is defined as “a loss, loss of use, or derangement of any body part, organ system, or organ function” (American Medical Association, 2001, p. 2). A scar on the lungs, in this sense, is an impairment. Impairment *ratings*, however, as defined by the AMA, measure the functional limitations caused by an injury: impairment ratings reflect “an individual’s ability to perform common activities of daily

living, excluding work” (American Medical Association, 2001, p. 4). “For example, an anatomic change such as a circumscribed pleural plaque would be an impairment based on an abnormality in anatomic structure. However, if there were no abnormality in lung function and no decrease in the ability to perform activities of daily living, the individual would be assigned a 0% impairment rating” (American Medical Association, 2001, p. 88). Under the AMA guidelines, a person may be judged functionally impaired, while still being able to hold down a job.

In this report, we use the term unimpaired to refer to an individual who experiences no decrease in the ability to perform the activities of daily life. In other words, he or she would be assigned a 0% impairment rating according to the American Medical Association definition. It is important to note that claimants who are unimpaired in this sense when they file a claim may manifest more critical symptoms after an extended latency period.

Trends and patterns in the severity of nonmalignant claimants' injuries are difficult to identify because there is no database in which claimants' medical data are consistently and reliably entered over time. The only information on this subject comes from special studies in which an analyst draws a sample of individual claims from defendants' files and reviews the medical information provided by the claimants to determine whether the information in the file offers evidence that the claimant was impaired.

In 1995, the Manville Trust implemented an audit program in which independent B-readers reviewed the X-rays submitted by a random sample of claimants. The Trust operates under the supervision of federal district court judge Jack Weinstein. The B-readers were selected in consultation with the plaintiffs bar; none of the B-readers employed in the audit had testified on behalf of an asbestos defendant. The X-ray review process was designed to give the benefit of any doubt to the claimant. A claim was downgraded only if both B-readers independently determined that they saw no indication of even low-level, sub-diagnostic X-ray evidence of interstitial fibrosis. “[O]f the X-rays the Trust actually received, approximately 50% failed independent B-reader review” (Affidavit of Patricia G. Houser, In re: Manville Personal Injury Settlement Trust Medical Audit Procedures Litigation, 98 Civ. 5693, March 13, 1999, p. 9).

Several more recent studies have found fractions of unimpaired claimants ranging from two-thirds to up to 90 percent of all current claimants (Edley & Weiler, 1993; Bernick, 2001a; Rourke, 2001; Chambers, 2002). Because most of these studies were commissioned by defendants and because the issue of impairment is central to the asbestos litigation controversy, their findings are hotly contested.

Judge Charles Weiner, who manages the federal multi-district litigation (MDL) process for asbestos litigation, noted that a large volume of the claims that had been assigned to MDL 875 had been initiated through mass screenings. He ordered that such cases be administratively dismissed without prejudice because "[o]ftentimes these suits are brought on behalf of individuals who are asymptomatic as to an asbestos-related illness and may not suffer any symptoms in the future" (Administrative Order No. 8, In re: Asbestos Products Liability Litigation [No. VI], Civil Action No. MDL 875, E.D.Pa., Jan. 16, 2002, p. 1).

In sum, it appears that a large and growing proportion of the claims entering the system in recent years were submitted by individuals who have not incurred an injury that affects their ability to perform activities of daily living.



## ***Mass Litigation Dynamics***

- **Statutes of limitations**
- **Mass filings**
- **Mass screenings**

A3823-22 0802 RAND

In the early days of asbestos litigation, plaintiffs in some states were barred from filing suits for asbestos-related injuries because courts held that their injuries had occurred many years ago when the workers were first exposed, and therefore the allowable time for filing claims had expired. Later, legislatures adjusted their statutes of limitation so as to require that latent-injury victims file suit within one or two years of when they know or should have known that they were injured (Hensler et al., 1985). Although a person may receive a clinical diagnosis of injury (such as pleural plaques) without suffering any functional impairment, in most instances the law deems that the statutory period for filing starts to run when the plaintiff knows or should have known that he was “injured.”

As a result, if a worker learns that he or she has been exposed to asbestos, seeks a medical examination to determine whether there has been a serious health consequence (e.g., cancer), and discovers that he or she has pleural plaques but no other signs of injury or impairment, a legal claim must be filed within a short time in order to protect his or her chance of seeking compensation.

Initially, asbestos manufacturers vigorously defended themselves against workers’ claims, raising a host of issues, including the risks of exposure to asbestos, whether the plaintiffs had been exposed to the defendant’s products and whether the statute of limitation had run (Hensler et al., 1985). Litigating individual claims against these major corporations was expensive and risky for plaintiff law firms and few were willing to take on asbestos workers’ claims

(Brodeur, 1985). By the mid-1980s, however, plaintiff law firms in areas of heavy asbestos exposure (such as jurisdictions with shipyards or petrochemical facilities) had learned that they could succeed against asbestos defendants by filing large numbers of claims, grouping them together and negotiating with defendants on behalf of the entire group. Often defendants would agree to settle all of the claims that were so grouped, including those claims that were questionable, to reduce their overall costs of litigation. By agreeing to pay questionable smaller-value claims in exchange for also settling stronger and larger-value claims, defendants could also contain their financial risk. Some plaintiffs might receive lower values for claims that were settled as part of a group. But litigating claims en masse lowered the cost and risk per claim for plaintiff law firms (Hensler, 2002).

To identify more potential claimants, plaintiff law firms began to promote mass screenings of asbestos workers at or near their places of employment (Hensler et al., 1985). Plaintiff law firms would bring suit on behalf of all of the workers who showed signs of exposure, sometimes filing hundreds of cases under a single docket number (Hensler et al., 1985). Given the profile of asbestos disease, the majority of plaintiffs had little or no functional impairment at the time of filing, although they met the legal standard for injury.

Some asbestos workers who were part of this group litigation would never develop a malignancy or significant functional impairment as a result of their asbestos exposure. But for those who did, being required to file soon after they were first clinically diagnosed as injured imposed a significant risk. Because most jurisdictions followed a "one injury" rule, these plaintiffs would not be allowed to file a second claim for the later-appearing disease. Settlement amounts could be calculated to take the statistical risk of future disability or early death into account, but those individuals who were unfortunate enough to develop serious disease might be left without sufficient funds to deal with disease-related losses.

To address this issue, some courts established "pleural registries" that enabled plaintiffs to satisfy statutes of limitation by filing their lawsuits, but delayed processing and resolving those lawsuits until the plaintiffs' injuries had progressed further (Schuck, 1992; Rothstein, 2001). In some jurisdictions, plaintiffs could choose whether or not to place their claim on such a registry; in others, claims were removable from an inactive docket (the pleural registry) only if they met pre-specified clinical criteria (e.g. diagnosis of malignancy, certain radiological exam results and pulmonary function test ratings) or were otherwise able to persuade the court that their claims should be activated. States that established pleural registries included Arizona, Connecticut, Hawaii, Illinois, Maryland, and Massachusetts. Although registries preserve plaintiffs' right to pursue compensation in the future, they do not provide present



compensation for whatever losses the plaintiffs might already have suffered or for monitoring their health going forward. Importantly, this means also that plaintiffs' lawyers do not secure fees immediately, making it harder for them to spread the risks of litigating more serious cases and less financially attractive for them to represent asbestos plaintiffs generally. Not surprisingly, most plaintiff attorneys in most jurisdictions are unenthusiastic about pleural registries, and in some jurisdictions (e.g., Baltimore) some plaintiff attorneys have vigorously contested their establishment or requirements. Support for pleural registries may also have waned after many states, including Maryland, Ohio, New Jersey, New York, and Texas—all states with large asbestos caseloads—adopted a “two-disease” rule, allowing plaintiffs who initially had nonmalignant diseases to bring a second lawsuit if and when a malignancy is diagnosed. Some states, such as California, relaxed their statutes of limitation for asbestos claims. For example, in California the statutory period does not begin until a plaintiff's ability to work at his or her ordinary occupation is impaired (CA Civ Proc §34.02).



## ***Efficiency Efforts Promoted Additional Litigation***

- **Judicial case management**
- **Defendants' settlement programs**
- **Bankruptcy trust procedures**

A3823-25 08/02 RAND

As asbestos cases flooded courts in areas of the country where there had been heavy exposure to asbestos, the courts struggled to manage asbestos caseloads more efficiently so as to reduce private and public transaction costs (Hensler et al., 1985; Hensler, 1995; McGovern 1986, 1989, 1997; Peterson & Selvin, 1991; Willging, 1985). The efforts of innovative judges to handle their asbestos caseloads efficiently were widely admired and imitated by fellow federal and state court judges (McGovern, 1995).

Increasingly, defendants chose not to aggressively contest liability but instead negotiated settlements of large numbers of cases with leading plaintiff attorneys' firms. These agreements typically called for settling hundreds or thousands of cases per year at amounts specified in administrative schedules that reflected differences in injury severity and other characteristics deemed to affect the value of cases. Although such strategies made it likely that defendants would pay some claims that would not have succeeded in court, these defendants hoped that by reducing their transaction costs they would minimize their total litigation bill (Hensler et al., 1985; Hensler, 2002). Judges encouraged these large-scale group settlements by consolidating cases for pre-trial processing. Typically, cases were consolidated by law firms representing the plaintiffs or by plaintiffs' place of employment, not by injury severity or strength of the legal claim (Hensler et al., 1985; McGovern, 1986).

Soon, judges and lawyers also began to consider the possibility of consolidating cases for *trial*. In some instances, just a few cases were selected for trial together, with a goal of minimizing duplicative testimony on issues such as general causation (Hensler et al., 1985). In other instances, a small number of cases would be selected from a larger group, with the thought that the verdicts the jury reached in the selected cases would establish the settlement value of the group as a whole (Selvin & Picus, 1987). In a few instances, juries were asked to decide the outcome of thousands of cases that had been consolidated for trial, based on hearing a few cases that had been selected to represent the group. In these consolidated trials, cases of varying severity and strength of legal and factual claims were grouped together (as had become the practice for settlement purposes) and the plaintiffs whose cases were presented to juries were deliberately selected to represent a range of injury severity (Hensler & Peterson, 1993; Saks & Blanck, 1992).

As some corporations emerged from bankruptcy and established trusts to pay claims, the bankruptcy trust administrators also developed claims processing procedures that would minimize transaction costs. Such procedures typically call for minimal information necessary to determine a claimant's eligibility to collect from the trust and to categorize the claim with regard to severity in order to determine the amount of money to be paid (Peterson, 1990; Smith, 1990). As the number of bankruptcy trusts increased, the total amount of money available to claimants and their lawyers in return for minimal claim preparation effort also increased. Although the trusts paid only modest sums to each claimant, the total fees available to law firms for representing large numbers of claimants on their trust filings could be substantial.

Taken together, these efforts by courts, litigators, and bankruptcy trust administrators generally reduced the per-case costs of processing asbestos claims. In this way, asbestos litigation was transformed in fact—although not in form—into a quasi-administrative regime, with some, if not all, of the transaction cost benefits that one would expect as a result of such a transformation.

Importantly, reducing per-case transaction costs made filing small claims financially viable for more people, thereby encouraging mass filings. Typically, most low-value tort claims never enter the court system because the expense of filing them far outweighs the compensation that might be obtained. The evolution of asbestos litigation changed this equation. Although no one knows for sure how many claims would have been filed in the absence of the administrative transformation of the litigation, it is highly likely that the steps taken to streamline the litigation actually increased the total dollars spent on the litigation by increasing the numbers of claims filed and resolved.



## ***Global Settlements Failed***

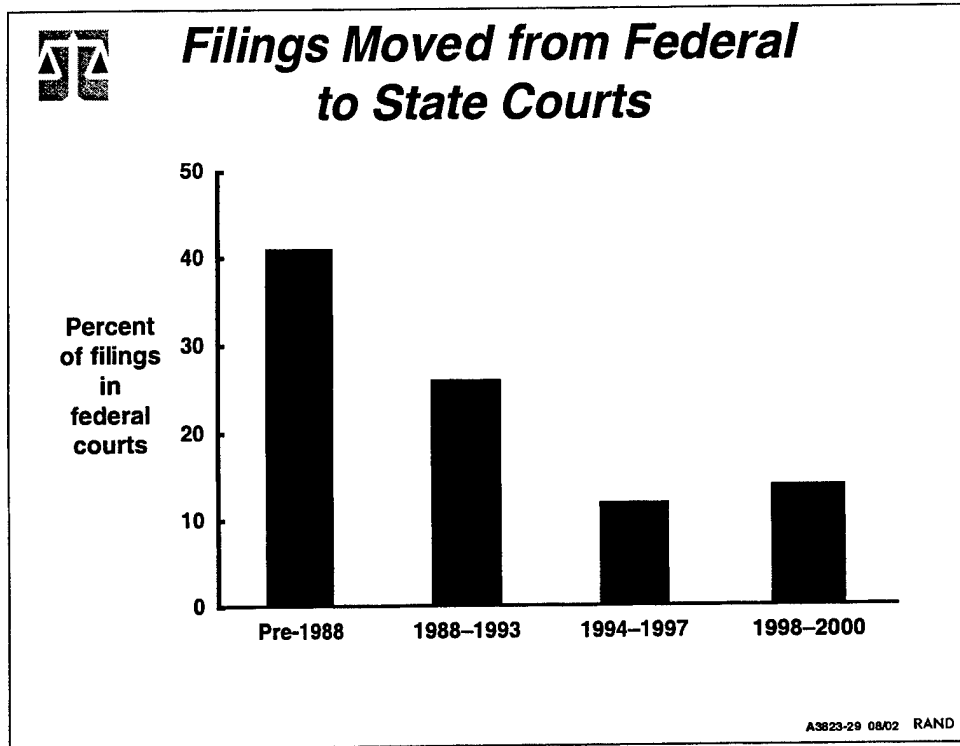
- **Multi-district litigation (MDL) did not produce a large-scale settlement**
- **Class action settlements overturned by U.S. Supreme Court**

A3623-27 08/02 RAND

Most mass tort litigation in the United States is resolved through large-scale “global” settlements. Sometimes those settlements take place within the context of class action litigation. Occasionally, they have occurred after the defendant filed for bankruptcy (Sobol, 1991). In many mass personal injury cases, however, global settlements follow on the heels of the transfer of all federal cases arising out of the relevant factual circumstances to a single judge, under the authority provided by 28 U.S.C. §1407 for MDL (Hensler, 2001a; Rheingold, 1996; Weinstein, 1995). The MDL procedure has been extensively used in mass tort litigation, but it was not applied to asbestos litigation until 1991, more than a decade after the litigation’s inception. After the cases were transferred, some participants in the litigation anticipated that the judge to whom they were assigned would help parties negotiate a global settlement of all federal cases against all defendants that would in turn provide a model for resolving state cases as well (Hensler, 2002). However, efforts to fashion such a broad settlement among the large number of defendants and plaintiff attorneys involved—with diverse and opposing interests—ultimately failed.

After a number of years, some of the major asbestos defendants negotiated a class action settlement of all *future* claims against them with leading asbestos plaintiff attorneys under the aegis of the MDL court (George v. Amchem

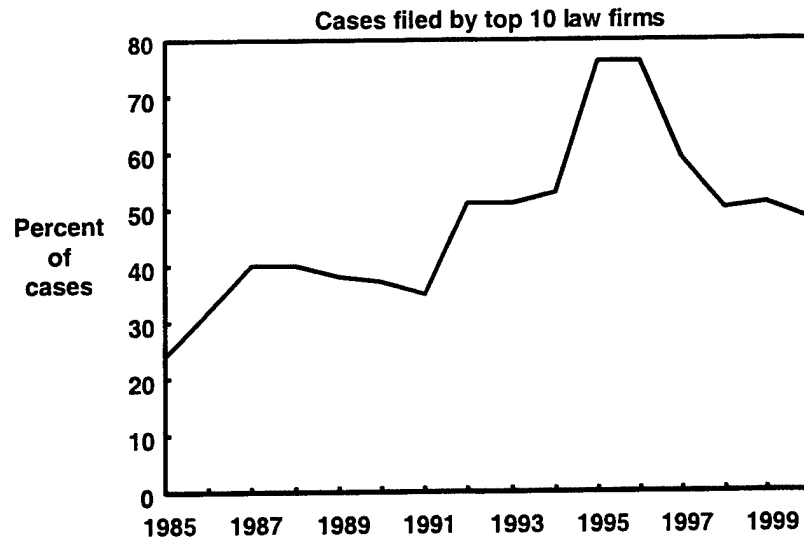
Products, 157 F.R.D. 246 [E.D., Pa., 1994]). That settlement proved highly controversial (Baron, 1993; Hensler, 2002; Symposium, 1995). When the settlement was rejected by the U.S. Supreme Court (*Amchem Products v. Windsor*, 521 U.S. 591 [1997]), and when the Court subsequently rejected a class settlement of asbestos claims against another major defendant (*Ortiz v. Fibreboard Corp.*, 527 U.S. 815 [1999]), efforts to achieve a global resolution of asbestos litigation through class action litigation collapsed (Cabraser, 1998).



Over time, Judge Charles Weiner, who presides over the federal MDL litigation, was able to resolve a substantial number of suits. To date, 95,994 asbestos suits have been transferred to Judge Weiner, in addition to the 7,411 cases that were filed in the Eastern District of Pennsylvania. Of these, about 73,000 cases have been closed; 265 have been remanded to their filing district for trial (communication with Clerk of the Court, Eastern District of Pennsylvania, August 30, 2002). But increasingly, plaintiff attorneys chose to avoid the federal courts and the MDL. Prior to 1988, 41 percent of the cases were filed in federal courts; by 1998, less than 20 percent were being filed in federal courts. With smaller fractions of asbestos lawsuits under the aegis of the MDL judge, the likelihood of achieving a global settlement within the MDL framework faded.

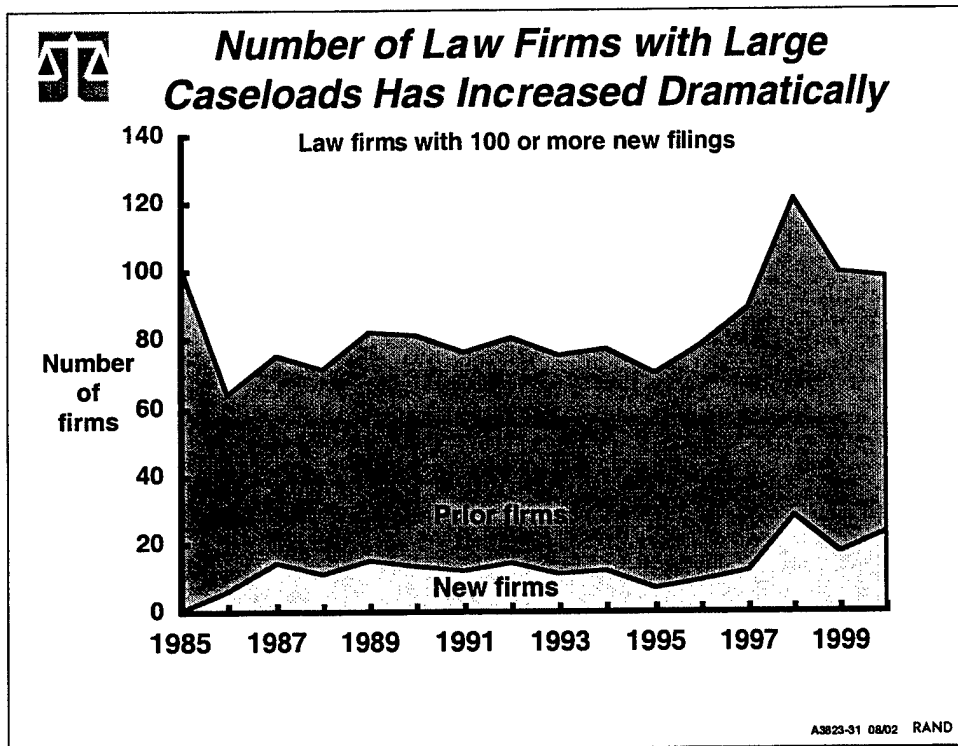


## ***The Litigation Became Increasingly Concentrated***



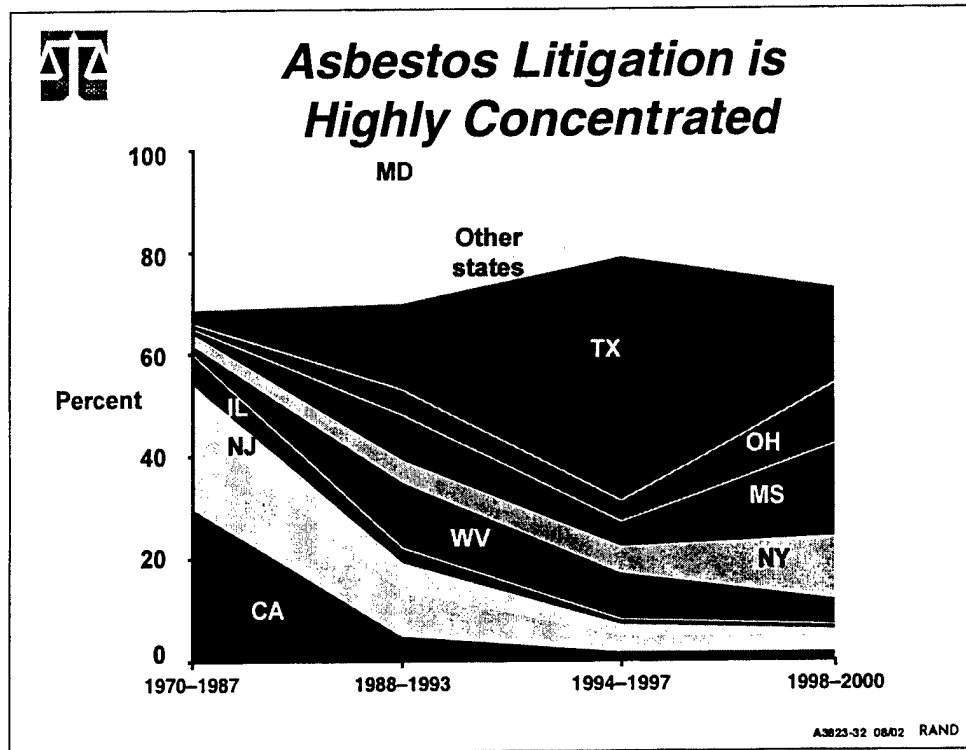
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By the early 1990s, asbestos litigation appeared to have stabilized; in the words of a leading commentator, it had become a “mature” litigation (McGovern, 1989). The leading asbestos manufacturers had been sued in tens of thousands or hundreds of thousands of cases and had evolved strategies for managing the litigation. A large fraction of the cases were being filed by a small number of plaintiff law firms (Hensler & Peterson, 1993). Over time, the litigation became more and more concentrated in a small number of firms. By 1992, ten firms represented half the annual filings against the defendants who provided data to us. By 1995, ten firms (many, but not all, of the same firms that had been in the 1992 “top ten”) represented *three-quarters* of the annual filings against these defendants, which had themselves grown by a third. The leading firms had standing settlement agreements with the major defendants. Virtually all cases settled. Defendants paid settlement amounts that reflected the characteristics of the case, the reputation of the lawyer, and their own exposure. Lead defendants, mainly asbestos product manufacturers, paid substantial amounts; peripheral defendants—whose connection with asbestos products was attenuated—paid more modest amounts. Defendants did not accept liability, but they had decided that it made financial sense to settle most cases, rather than spend money to litigate aggressively.



After the failure of the Amchem and Ortiz class action settlements in 1997 and 1999, the landscape of asbestos litigation began to change. Filings surged, perhaps as a result of the publicity engendered by the class action notices required by Amchem and Ortiz and the ensuing controversy, which was widely reported in the legal media. The number of law firms filing more than 100 cases annually increased dramatically, and the number of firms that were new to such large-scale filings shot up. A national settlement program that had been trumpeted by Owens-Corning Fiberglass Corporation as a solution to their asbestos litigation exposure collapsed under the weight of an unanticipated flood of claims, and the company petitioned for bankruptcy reorganization. The consortium of defendants that had hoped to contain their asbestos litigation exposure through the Amchem settlement suspended operations (Hensler, 2002), and many of their members also filed for Chapter 11 reorganization. As filings surged, many of the asbestos product manufacturers that plaintiff attorneys had traditionally targeted as lead defendants filed for bankruptcy. Plaintiff attorneys sought out new defendants and pressed defendants that they had heretofore treated as peripheral to the litigation for more money. With new firms engaged in litigating on the plaintiffs' behalf, and new corporations drawn into the litigation or assuming a more central role, the old settlement agreements began to unravel.





Deciding where to file a lawsuit is an important step in all litigation. The U.S. legal system offers litigants considerable flexibility with regard to forum selection. Depending on how they structure the litigation, plaintiffs may be able to choose between federal and state courts, among different state courts, and among different venues within a state. Plaintiffs in civil litigation and prosecutors in criminal litigation get to take the first step by filing in a particular jurisdiction. Civil defendants may contest the plaintiff's choice and, if successful, may remove the lawsuit to another jurisdiction. Criminal defendants may request a change in venue. Both can be hard to obtain.

"Forum shopping" is a term frequently used to refer to parties' strategic efforts to find the most attractive forum to pursue their case. The figure above illustrates the changes over time in the pattern of asbestos filings. In the early days of the litigation (1970–1987), 60 percent of asbestos personal injury cases filed in state courts were filed in four states: California, Pennsylvania, New Jersey, and Illinois. By 1998–2000, however, filings of asbestos cases in these states accounted for only 7 percent of the total. At the other extreme, five states—Mississippi, New York, West Virginia, Ohio, and Texas—that had accounted for 9 percent of the cases filed before 1988 accounted for 66 percent of filings between 1998 and 2000.

As a formal matter, the system frowns on such forum jockeying. The federal judiciary seeks to constrain forum shopping by applying the same procedural rules in all federal courts. But in diversity cases (private suits between parties

from different states), federal courts apply substantive state law. These state laws differ in ways that can determine outcomes of product liability cases such as asbestos lawsuits. Each state's laws also determine whether it is easy or difficult for out-of-state plaintiffs to file there, and how much latitude plaintiffs have for selecting venues within the state. As in the federal system, courts are supposed to apply uniform procedural rules within a state. Most states model their procedural rules upon the federal rules, but there are important differences between federal and state rules and among state rules. Because state substantive law and procedural rules differ—and because, in reality, informal practices differ across state *and* federal courts—our federal system provides strong incentives for plaintiffs to structure their lawsuits in ways that allow them to file in favorable forums. When defendants are able to do so, they in turn attempt to remove cases to forums that are favorable to them.



## ***Cases Migrated to New States***

**Top five states with most asbestos filings  
(federal and state cases combined)**

<b>Pre-1988</b>	<b>1988–1993</b>	<b>1994–1997</b>	<b>1998–2000</b>
<b>California</b>	<b>Texas</b>	<b>Texas</b>	<b>Texas</b>
<b>Pennsylvania</b>	<b>West Virginia</b>	<b>West Virginia</b>	<b>Mississippi</b>
<b>Maryland</b>	<b>Pennsylvania</b>	<b>Florida</b>	<b>New York</b>
<b>New Jersey</b>	<b>Mississippi</b>	<b>New York</b>	<b>Ohio</b>
<b>Illinois</b>	<b>Maryland</b>	<b>Louisiana</b>	<b>Maryland</b>

A3823-34 0802 RAND

Historically, asbestos litigation has been heavily concentrated in a relatively small number of states. In the early days of the litigation, cases were filed in about a dozen federal and state courts in coastal areas where shipyard workers had been heavily exposed to asbestos and in the gulf states where there had been heavy use of asbestos in petrochemical facilities (Hensler et al., 1985). Just nine states' federal and state courts accounted for three-quarters of the cases filed through 1987.

By the last period available for analysis (when 86 percent of all cases were filed in state courts), ten states accounted for 84 percent of the cases. Five of the original nine leading states—Texas, Mississippi, Maryland, Pennsylvania, and New York—were in the 1998–2000 “top 10.” Five states became centers of asbestos litigation later: Florida, Louisiana, Ohio, Virginia, and West Virginia.

Mississippi's liberal joinder rule, which allows plaintiffs from out of state to join a lawsuit filed by in-state plaintiffs against out-of-state defendants, provides one explanation for the concentration of filings there. The result is something akin to a multi-state class action, without the necessity for plaintiffs to meet the class certification requirement (F.R.C.P. 23[b][3]) that common issues predominate and without the protections against intra-class conflicts of interest required by the U.S. Supreme Court in *Amchem* (521 U.S. 591 [1997]).

In Maryland, Mississippi, and Virginia, trial judges have consolidated thousands of cases for trial. Trying asbestos claims together is not new, nor are consolidated trials unique to these jurisdictions. In 1984, Judge Robert Parker consolidated 30 cases for trial in the Eastern District of Texas (Selvin & Picus, 1987), and judges elsewhere have tried smaller numbers of cases together (Hensler et al., 1985). But trying thousands of cases together raises due process questions for plaintiffs and defendants alike (Trangsrud, 1989). If the jury decides in favor of the defendant, *all* of the plaintiffs, not just those whose cases were presented to the jury, lose—as indeed happened in a trial of 800 cases arising out of the use of Bendectin (Green, 1996). For defendants, the risk of a liability verdict and huge punitive damages, as well as the potential for juries to peg the amount of a compensation award to the most injured plaintiff, however unrepresentative that plaintiff may be, loom large. Defendants have challenged large-scale consolidations for trial of asbestos lawsuits on due process grounds. In 1998, the Fifth Circuit Court of Appeals vacated the results of a consolidated trial in which verdicts for 160 plaintiffs were extrapolated to a class of more than 3,000 plaintiffs (*Cimino v. Raymark Indus.*, 151 F.3d 297 (Fifth Circuit, 1998)). The court held that the trial plan violated the Seventh Amendment right to trial. However, the West Virginia Supreme Court has upheld and indeed encouraged mass consolidations in that state (Rothstein, 2001).

In asbestos litigation, experience suggests that consolidation tilts the playing field against defendants, rather than against plaintiffs. As judges who favor mass consolidations as a calendar-clearing mechanism anticipate, defendants faced with a consolidated trial of thousands of cases are likely to settle.

Other procedural rules and practices may attract plaintiffs to certain states or pose special challenges for defendants who are sued there. Many of these rules and practices apply to civil litigation in general but have special “bite” in asbestos cases. Under Mississippi’s rules, for example, trial courts lack the authority to order independent medical examinations of plaintiffs (*Swan v. IP, Inc.* 613 So. 2d 846 [1993]), limiting defendants’ ability to challenge asbestos plaintiffs’ disease allegations. In Texas, where asbestos cases are dispersed over multiple jurisdictions and there are many different law firms now representing plaintiffs, defendants who are named on thousands of cases may be noticed on the same day for scores of trials in a dozen or more jurisdictions. This creates special settlement pressures for defendants. In California, the Code of Civil Procedure §340.2 gives priority for trial scheduling to all plaintiffs with a terminal illness, allowing plaintiffs with mesothelioma to get to trial quickly. Similarly, New York City has a special expedited trial schedule for asbestos plaintiffs with mesothelioma and other cancers. Elsewhere, plaintiffs with terminal illnesses sometimes die before their cases reach trial.



## ***Cases Concentrated in Venues Favorable to Plaintiffs***

### **Top five state court venues**

<b>1970–1987</b>	<b>1988–1993</b>	<b>1994–1997</b>	<b>1998–2000</b>
<b>Los Angeles, CA</b>	<b>Kanawha County, WV</b>	<b>Harris County, TX</b>	<b>Cuyahoga County, OH</b>
<b>San Francisco, CA</b>	<b>Jackson County, MS</b>	<b>Galveston County, TX</b>	<b>Jefferson County, MS</b>
<b>Philadelphia, PA</b>	<b>Baltimore, MD</b>	<b>Jefferson County, TX</b>	<b>New York, NY</b>
<b>Baltimore, MD</b>	<b>Orange County, TX</b>	<b>Monongalia, WV</b>	<b>Baltimore, MD</b>
<b>Alameda, CA</b>	<b>Middlesex County, NJ</b>	<b>New York, NY</b>	<b>Claiborne County, MS</b>

A3823-36 08/02 RAND

Within the leading states, plaintiff attorneys favored certain venues. By the mid-1990s, three counties in Texas (Harris [Houston], Galveston, and Jefferson [Beaumont]) accounted for 42 percent of all new filings. In the last several years, two counties in Mississippi (Jefferson [Natchez] and Claiborne [Vicksburg]) joined the list of venues attracting large numbers of claims. In 1998–2000, close to 20,000 cases, 13 percent of the total filed over that period, were filed in these two counties.

Some of the states and venues in which asbestos filings were or are concentrated are areas with high levels of civil litigation generally. In 2000, New York and California led the nation in absolute numbers of civil case filings, with New Jersey in fourth place, and Texas following in eighth position (National Center for State Courts, 2001). Maryland led the nation in per capita civil case filings, with New Jersey and New York following in fifth and sixth places respectively. But the concentration of asbestos filings across states and venues within states primarily reflects the character and history of the litigation, as well as the perceived advantages that different venues offer plaintiffs. Many firms developed asbestos specialty practices because they were located in regions with high asbestos exposure. Not surprisingly, they tended to file cases in states and venues in these regions. Over time, some of these firms developed nationwide practices but continued to file cases in the jurisdictions where they had previously been successful. This partially explains why the Baltimore, Maryland, trial court was among the “top 5” venues in three of the four periods displayed

in the charts and why New York county (Manhattan) was among the leading venues in the two most recent periods. But these historical circumstances do not seem to entirely explain recently emerging patterns of concentration. Whereas case filings in some of the leading venues are distributed over time in the same proportions as total case filings, virtually all of the cases filed in Jefferson and Claiborne Counties were filed in the last few years. Concentrations of filings in some other counties (e.g., Cuyohoga, Ohio, and Erie, New York) also appeared quite recently. While it is possible that workers in these areas were exposed to asbestos more recently than elsewhere (and hence developed signs of disease more recently), it is much more likely that litigation dynamics—such as the establishment of new firms, more aggressive screening practices, or shifts in the perceived attractiveness of these forums—explain these patterns. Defendants assert that two developments have encouraged mass filings: the ability of plaintiff attorneys to choose venues most favorable to them—even if the plaintiffs were exposed to asbestos elsewhere—and trial management practices that defendants view as advantageous to plaintiffs (Rothstein, 2001).



## *Outline*

- How did we get here?

- Where are we today?

- Is there a better way?

A3023-38 08/02 RAND



## ***Dimensions of the Litigation***

- • **Claims**
- **Costs and compensation**
- **Economic effects**
- **Future outlook**

A3823-39 08/02 RAND





## ***Over 600,000 Claimants to Date***

- **Number of claims filed annually has risen sharply**
- **Typical claimant files against several dozen defendants**
- **Average severity of claimed injuries is declining**
  - **Slow growth in number of seriously ill claimants**
  - **Very rapid growth in numbers of claims for less serious injuries**

A3623-40 08/02 RAND

We believe that over 600,000 individuals have brought claims for asbestos-related personal injuries through the end of 2000.

A number of major asbestos defendants and trusts have provided us, on a confidential basis, lists of the claimants who named them in an asbestos lawsuit before 2001. Because claimants typically file claims against multiple defendants, even if complete data on the number of claims filed against all defendants were available (which they are not), we could not simply add up all of these claims to get the total number of claimants. We deleted the observations on each list for which we did not have adequate information to determine whether the claimant was also included on one or more of the other lists. We then compared the lists to identify the total number of unique individuals who had brought a claim against one or more of these entities.

For several reasons, our total of 600,000 claimants to date is probably an underestimate. First, we obtained data on claims submitted through the end of 2000, but a large number of claimants filed claims in 2001. For example, nearly 91,000 claims were filed with the Manville Trust during 2001 ([www.mantrust.org](http://www.mantrust.org)). Some of these claimants may have already filed against one of the entities that had provided lists to us, in which case they are included in our count. But many of those who filed with the Manville Trust in 2001 are probably not included in our estimate. Second, there may be individuals who

brought asbestos claims but did not name any of the entities from whom we had obtained data and are therefore not included on any of the lists available to us. Because the entities who provided these lists include many of the defendants and trusts who have been prominent in the litigation, we believe there are few claimants who did not name any of them. Nonetheless, there are probably some claimants who are not included on the various lists provided to us. Third, some of the claimants we deleted from one list because of inadequate identification information may not have been represented on any of our other lists and therefore are not included in our final tally.

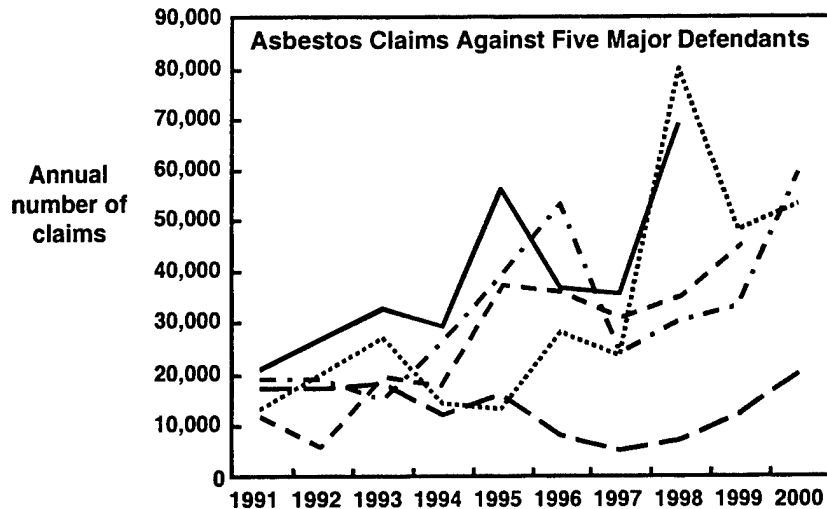
Over the last decade, the annual number of claims filed against most defendants increased substantially, with some defendants seeing claims double in a single year. The patterns vary across defendants. In some years, the number of filings against one defendant rose sharply, while claims filed that year against another defendant decreased. Nonetheless, the general pattern shows a dramatic increase in the rate at which claims are entering the system.

Because most claimants file claims against multiple defendants, the magnitude of asbestos litigation is amplified beyond what it would be in more traditional tort litigation that has plaintiffs filing lawsuits against one defendant or a small number of defendants. Furthermore, the number of defendants named by the typical claimant is increasing. In the early 1980s, claimants typically named about 20 different defendants. The data we have now suggests that by the mid-1990s, the typical claimant named 60 to 70 defendants.

Although the number of claimants is increasing rapidly, the average severity of claims is declining in the sense that a growing fraction of claims are for less severe injuries. While the frequency of claims from people with malignant diseases has been increasing slightly, the frequency of claims from those who are less seriously ill, or asymptomatic, is growing very rapidly. In other words, not only has the number of claims been increasing but also the composition of those claims has been shifting.



## ***Annual Claims Filings Have Risen Sharply in the Last Few Years***

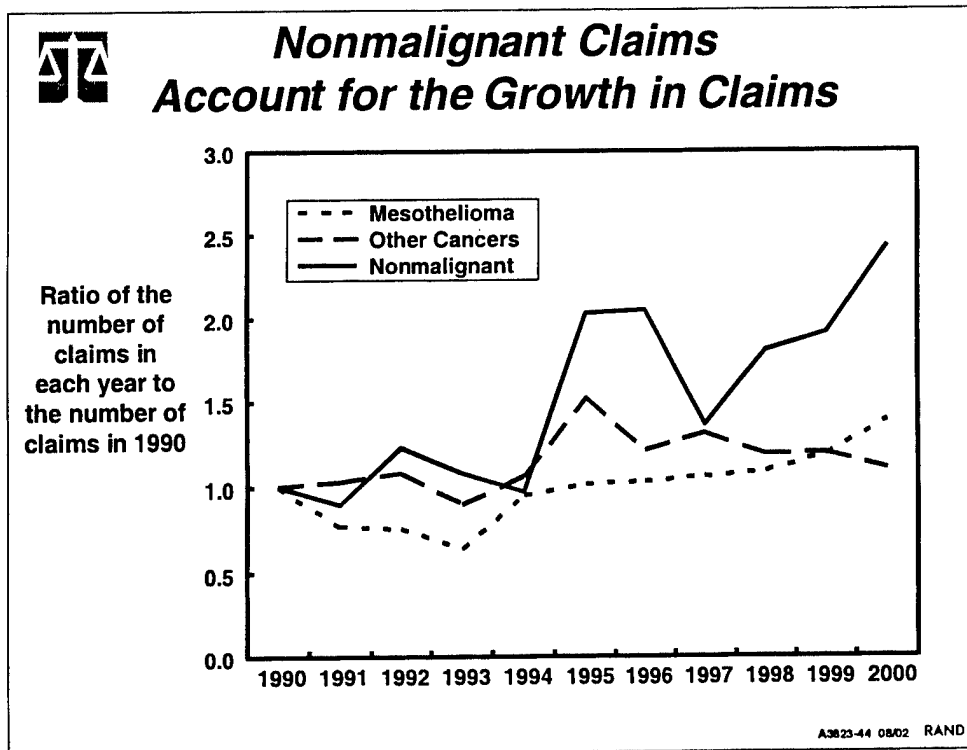


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This chart shows the number of claims filed each year over the last decade against five major defendants, including a bankruptcy trust, defendants who have entered bankruptcy, and non-bankrupt corporations. We gathered data for three of these defendants from public records. The two other datasets are private but have been shared with other analysts and/or presented elsewhere (see, e.g., Merrill Lynch, 2000). Each of these defendants has a particular posture in the litigation, so we would not expect their experiences to be identical. Nor would we expect their experiences to be representative of all defendants. However, in dozens of interviews we conducted with participants on all sides of the litigation, there has been near universal agreement that these defendants' experiences are broadly representative of the patterns of asbestos claim filings over the 1990s. We include only five defendants on the chart so as not to obscure the details of each defendant's experience.

The sharp year-to-year changes in annual filings against each of these defendants reflect events in the litigation in general or in the circumstances of a particular defendant. The general pattern, however, is the same for all of them: Over the past decade, the number of claims filed annually against each of these defendants increased substantially. Four of them were each receiving 15,000 to 20,000 claims per year at the beginning of the 1990s. That number grew throughout the decade until by the year 2000 it had grown to roughly 50,000 claims per year. The bottom line shows one company that appeared to have the litigation under control in the early 1990s when the annual

number of claims against it was actually drifting downward. But even this company experienced a sharp increase in claims toward the end of the decade. Whether these trends will continue into the future is an open question. But it is clear from our interviews that recent changes in filing rates have played an important role in shaping the future expectations of attorneys, parties, and business analysts.



To illustrate trends over time by injury category, we computed the ratio of the number of claimants in each category who filed a claim each year to the number of claimants in that category who filed a claim in 1990. It is clear that the growth in the annual number of claims observed in the earlier chart is almost entirely due to increases in the numbers of nonmalignant claims entering the system.

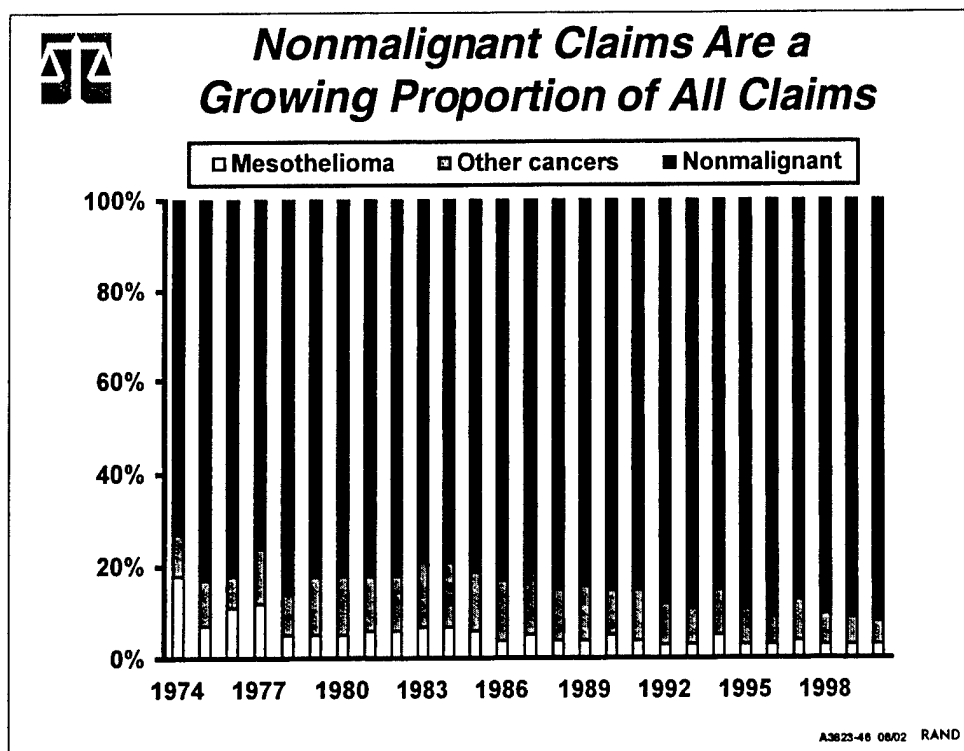
In the early 1990s, the number of mesothelioma claims drifted downward. By 1993, the annual number of mesothelioma claims had fallen by about one-third. But as the chart shows, the number of mesothelioma claims began to climb again in the mid-1990s. By 2000, the annual number of mesothelioma claims entering the system had grown to about one and a half times the 1990 level. Although the annual number of mesothelioma claims grew over the decade, the absolute number of these claims is very small compared to the absolute number of nonmalignant claims. Hence, the growth in the annual number of mesothelioma claims accounted for only a very small part of the growth in the total number of claims entering the system each year. Nonetheless, because these are the most serious, and consequently most costly, some of the attorneys we interviewed cited the growth in the annual number of mesothelioma claims as the most important recent change in the litigation.

Claims for other cancers grew during the first half of the 1990s, then gradually declined. The annual number of claims for cancers other than mesothelioma

ended the decade at a level roughly ten percent greater than had been experienced at the outset of the decade.

Claims for nonmalignant injuries grew sharply through the the last half of the decade. Almost all the growth in the asbestos caseload can be attributed to the growth in the number of these claims, which include claims from people with little or no current functional impairment. Many of the participants we interviewed, including those involved on behalf of both plaintiffs and defendants, cited the rapid growth in the annual number of claims for nonmalignant conditions as the most important recent trend in the litigation.

Defendants do not generally agree on a classification scheme for nonmalignant injuries. For example, one defendant who provided information to us classified all nonmalignant claims into five categories. Another defendant divided them into 28 different categories, none of which matched any of the five categories used by the first defendant. Further, several defendants told us that they had changed the systems they used to classify claims over time. In these cases, we cannot even consistently classify nonmalignant claims by categories over time for the same defendant, let alone merge its claims data with the data provided by other defendants and trusts. Therefore, we have not been able to break down nonmalignant claims into finer categories.



The rapid growth in the annual number of claims filed for nonmalignant conditions has profoundly affected the overall distribution of claims entering the system. This chart shows the changing composition of claims by type.

Mesothelioma claims are shown at the bottom. Although the annual number of mesothelioma claims has been increasing in recent years, the number of all claims has been increasing much faster. Therefore, mesothelioma claims are decreasing as a proportion of the whole. Mesothelioma claims accounted for over ten percent of all claims in the 1970s, but fell as a percentage of total claims in the late 1970s, accounting for roughly five to seven percent of claims through most of the 1980s. In the late 1980s, the mesothelioma share of the claims entering the system each year fell further, to three to four percent of all claims, and remained at that level through the 1990s.

Other cancer claims, shown in the segment just above mesothelioma, show a similar picture. They accounted for 11–14 percent of annual total claims through the 1970s and most of the 1980s. The other cancer share of claims declined slowly in the late 1980s and 1990s to a relatively small proportion, about five percent of the whole, in 2000.

The top segment of each bar shows the proportion of claims that are for nonmalignant injuries. Nonmalignant claims accounted for roughly 80 percent of all claims entering the system through the mid 1980s. The fraction of claims that asserted nonmalignant conditions grew through the late 1980s and early 1990s, finally stabilizing at about 90 percent of annual claims in the late 1990s.



## ***Claims from Workers in Nontraditional Industries Are Growing Most Rapidly***

	1999	2000	2001	% increase	
				1999– 2000	2000– 2001
<b>Traditional</b>	<b>16,997</b>	<b>31,496</b>	<b>43,397</b>	<b>85</b>	<b>54</b>
<b>Nontraditional*</b>	<b>11,420</b>	<b>23,582</b>	<b>40,453</b>	<b>107</b>	<b>71</b>

**\*Food and beverage, textiles, paper, glass, iron/steel/nonferrous, durable (metal) goods, etc.**

Source: Claims Resolution Management Corporation, 2001.

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Another emerging trend is an increasing volume of claims by workers who were exposed to asbestos in nontraditional industries. Thus far, most of the asbestos claims have been brought by people who came into contact with asbestos in the course of their work. People have been exposed to asbestos in other ways and some claims do arise from other kinds of asbestos exposure. But most claims are based exposure to asbestos in a workplace.

In the initial phase of the litigation, most claimants came from industries in which workers physically manipulated asbestos or products containing asbestos and typically inhaled large amounts of asbestos fibers on an everyday basis. Nicholson and his colleagues focused on the industries in which occupational exposure to asbestos was substantial: asbestos mining, manufacture, or installation, shipyards, railroad and automobile maintenance, construction, chemical, and utilities. Because workers in these industries were so heavily exposed to asbestos and, consequently, accounted for the large majority of claimants in the early days of the litigation, these industries are often termed the "traditional" industries. More recently, however, there has been rapid growth in the numbers of claims brought by people who were exposed to asbestos while working at a job site where asbestos was present in the atmosphere but not to the degree typical of the traditional industries. For example, large numbers of claims have recently been brought by workers in the textile industry. Textile workers sometimes work with machines run by motors with gaskets that contain



asbestos or in facilities ventilated by ducts lined with asbestos. Some asbestos fibers may have been released into the air and, consequently, workers may breathe some amount of asbestos. But they are unlikely to handle it or inhale as much of it as the shipyard workers (who were working in enclosed, tight quarters, in an atmosphere thick with asbestos fibers) or asbestos installers. In fact, the growth rate in the annual number of claims from individuals who were exposed in these nontraditional industries is now significantly higher than growth rate in the annual number of claims from those in traditional industries. The number of claims per year from individuals who were exposed while working in the nontraditional industries is now about the same as the annual number of claims filed by workers from the traditional industries.

The growing proportion of claims from workers who were exposed to asbestos in the nontraditional industries implies that an increasing proportion of claims are being brought by people whose exposure to asbestos has been less severe than it was in the past. Because the severity of asbestosis is related to dose, the growth in the fraction of claims brought by people whose exposure to asbestos was less severe would imply a commensurate decline in the severity of claimed conditions.



### ***The Number and Range of Defendants Have Also Increased Sharply***

- **Our list of defendants includes more than 6,000 firms**
  - **Increasing number of defendants outside the asbestos and building products industry**
  - **Both large and small businesses**
- **At least one company in nearly every U.S. industry (at the two-digit SIC level), now involved in litigation**
- **By 1998, nontraditional defendants account for more than 60% of asbestos expenditures (confidential study)**

A3823-49 08/02 RAND

Because most of the traditional defendants are in bankruptcy and are not making payments any more, the litigation has moved on to a wide variety of new defendants. The number of defendants typically named in claims is growing as well.

The initial RAND study of asbestos costs and compensation (Kakalik et al., 1983) found the list of defendants named on asbestos claims included approximately 300 firms. As the litigation has continued, the number of companies named by asbestos claimants has grown dramatically. A number of defendants, insurers, and plaintiff and defense attorneys have provided lists of asbestos defendants to us on a confidential basis. We have worked through the lists provided us to combine related corporate entities—subsidiaries, branches, divisions, and so on. To date, we have identified over 6,000 entirely independent entities that have been named as defendants on an asbestos personal injury claim.

Asbestos defendants span the full range of American business. Many are large corporations with thousands of employees and billions in revenues. Others are firms with as few as 20 employees and just a few million dollars in annual revenues.

The litigation has spread to virtually all parts of the U. S. economy. The U. S. Department of Commerce uses the Standard Industrial Classification (SIC) system to categorize economic activity for statistical purposes. The SIC system is hierarchical. All types of economic activity are divided into a small number

of very broad categories with narrower subdivisions. Every business in the United States is assigned an SIC code according to its primary activity. The firms on our current list of defendants fall into 75 different SIC categories at the 2-digit level. The SIC system divides the entire U. S. economy into 83 industries at this level. In other words, this litigation has spread to touch firms in industries engaged in almost every form of economic activity that takes place in the American economy. The incidence of litigation is very spotty in some areas—with only a handful of defendants in some codes—and heavy in others. But the point is that the litigation has spread well beyond the asbestos-related manufacturing and installation industries where it first began.

Nontraditional defendants are also paying an increasing share of the costs to resolve asbestos injury claims. A confidential study of asbestos costs reports that, by the late 1990s, nontraditional defendants accounted for about 60 percent of asbestos expenditures. In contrast, according to this report, in the early 1980s, traditional defendants accounted for about three-quarters of expenditures. This study was performed for a private client by a respected analyst who has had extensive experience in the asbestos area, and whose work was cited to us by plaintiff and defense attorneys alike. We discussed both the analysis and the data on which it was based with the analyst and determined that the work was analytically sound.

Given the number of major defendants that have filed for bankruptcy since 1998, it seems likely that the nontraditional defendants' share of the costs to resolve asbestos injury claims is substantially higher today.



## ***What's Going on Today?***

	<b>1982</b>	<b>Today</b>
<b>Number of claimants</b>	<b>21,000</b>	<b>600,000</b>
<b>Number of defendants</b>	<b>300</b>	<b>6,000</b>
<hr/>		
<b>Total costs to date (nominal \$)</b>	<b>\$1 B</b>	<b>?</b>
<hr/>		
<b>Bankruptcies</b>	<b>3</b>	<b>?</b>
<hr/>		
<b>Estimated future costs (nominal \$)</b>	<b>\$38 B</b>	<b>?</b>

A3823-51 08/02 RAND

In 1982, people were shocked to learn that over 21,000 claimants had filed claims for asbestos-related injuries and that the litigation had spread to about 300 defendants. Today, we believe that through the year 2000 over 600,000 claimants had filed against about 6,000 defendants.



## ***Dimensions of the Litigation***

- **Claims**
- • **Costs and compensation**
- **Economic effects**
- **Future outlook**

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## ***Estimated Total Costs of Resolving Asbestos Claims Through 2000: \$54 B***

- **Publicly available data are very limited**
- **We estimate total outlays of \$54 B through 2000**
  - **U.S. insurers** **\$22 B**
  - **Insurers outside U.S.** **\$8–\$12 B**
  - **Defendants** **\$20–\$24 B**
- **At least 5 major companies have each spent more than \$1 B on asbestos litigation**

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There are no publicly available estimates of the total amount spent on asbestos litigation, and the data needed to develop an estimate are not publicly available. We obtained confidential data and the results of proprietary studies from a variety of sources. Based on these data and analyses, we estimate that approximately \$54 billion has been spent on asbestos litigation through 2000. That includes what defendants have spent compensating claimants and paying their loss adjustment expenses, i.e., their transaction costs.

As noted earlier, we combined data provided on a confidential basis from a large number of defendants and trusts to estimate the number of claims for each type of claim (mesothelioma, other cancer, or nonmalignant) filed in each year through 2000. We used these data to estimate the distribution of time-to-disposition for all defendants combined for each type of claim. The defendants and trusts who provided these data to us generally told us they believe they do not systematically settle claims against them faster, or slower, on average, than other defendants. In our interviews with other participants in the litigation, we asked if they could suggest defendants or trusts who they thought were particularly quick, or slow, to settle claims. While a variety of entities were discussed in these conversations, the defendants and trusts in our database were not often mentioned. We assume these distributions are representative of the distribution of time-to-disposition by type of claim for all defendants and trusts. We multiplied our estimates of the numbers of claims filed each year for each type of claim by our estimates of the distributions of time-to-disposition for

each type of claim. The resulting estimates are equivalent to estimates of the numbers of claims of each type settled each year.

We then estimated the total costs of claims of each type in each year. Total costs include both the amounts paid a claimant of each type by all defendants combined and defendants' transaction costs. We began with RAND's estimates of the average costs per claim in 1982 by type of claim (Kakalik, 1983). We then estimated the corresponding total costs per claim by type in 2000. (We received assistance from analysts at Tillinghast-Towers Perrin, a leading actuarial consulting firm, in estimating the year 2000 total costs.) We computed the average annual rate of increase in costs per claim for each type of claim between these two estimates and used these rates to estimate the cost trends from 1982 through 2000. We have no reason to believe that the costs of claims for each type of claim grew smoothly over that period. Costs undoubtedly grew more rapidly in some years than in others. However, the average of the estimates of costs by year we developed by smooth interpolation between 1982 and 2000 should be close to the average of the true costs over that period.

We multiplied our estimate of the number of claims by type of claim filed in each year over the period 1982–2000 by the corresponding estimates of ultimate costs per claim by disease type and year and the distribution of time-to-disposition. The result is an estimate of the total costs defendants incurred in each year on the claims of each type filed in each year. We added these estimates for the years 1983 through 2000 to the RAND estimate of total costs of asbestos litigation through 1982 to obtain an estimate of the total costs of asbestos litigation through 2000. Our estimate is \$54 billion.

Analysts at Milliman USA, another leading actuarial consulting firm, have independently developed estimates of the total costs of asbestos litigation through 2000. They have told us our estimates were consistent with theirs. We also discussed our estimate with representatives of several major reinsurance companies. None of those we interviewed expressed strong reservations about our results. Some thought we might be somewhat high; others thought we were somewhat low. But none thought our estimate was very far off.

U.S. insurance companies are required to list their cumulative net paid losses, including loss adjustment expenses, in their annual statements. A. M. Best has collected and collated these data. They report that U. S. insurers have spent about \$21.6 billion on asbestos claims through 2000 (Altonji, Horvath & Simpson, 2001).

Based on conversations with both U. S. and foreign insurance companies, we believe foreign insurers have spent \$8 to 12 billion through 2000, over half of which has been assumed by London. Milliman estimates that foreign insurers have spent \$7 to 10 billion on asbestos litigation to date (Bhagavatula, Moody & Russ, 2001, p. 86).

U.S. defendants have spent from \$20 billion to \$24 billion on asbestos litigation through 2000. In their bankruptcy filings and related documents, corporations filing for bankruptcy have reported expenditures (including costs recovered from insurance) ranging from \$450 million to \$5 billion. We are aware of at least five defendants who have each spent more than a billion dollars apiece. Out of more than 6,000 defendants, only a relatively small number have spent such large amounts. A very much larger group of defendants has spent relatively small amounts, but in the aggregate they add up to several billions of dollars.





## ***Verdicts Are Infrequent but Attract Great Attention***

- **Since 1993, out of hundreds of thousands of claims, few have been tried to verdict**
  - **527 trial verdicts**
  - **1,598 plaintiffs reaching verdict**
- **Plaintiffs won two-thirds of the time**
  - **Mesothelioma plaintiffs were most successful**
- **Most claims were tried in groups**
  - **In most trials, juries heard a small number of claims**

A3823-58 08/02 RAND

Using Mealey's Litigation Report on asbestos, we have identified all trial verdicts from 1993 to 2001. During that time, relatively few asbestos cases have reached verdict: there have been 527 trial verdicts involving 1598 plaintiffs. (There are more plaintiffs reaching verdict than trials because many trials involve multiple claims.) Although civil trial verdicts are becoming increasingly rare nationwide, the asbestos trial rate seems substantially lower than the norm. (Calculating a trial rate for asbestos suits is complicated because most claims are brought against scores of defendants, some of whom may settle and some of whom will contest cases up to verdict. Moreover, different defendants will settle at different times.)

The number of plaintiffs whose cases have been tried to verdict has decreased dramatically since 1993, from almost 500 to just over 150 in 2001.

Mesothelioma and other cancer claims were more likely to reach trial than claims for nonmalignant diseases. However, 62 percent of all claims tried to verdict were for nonmalignant diseases.

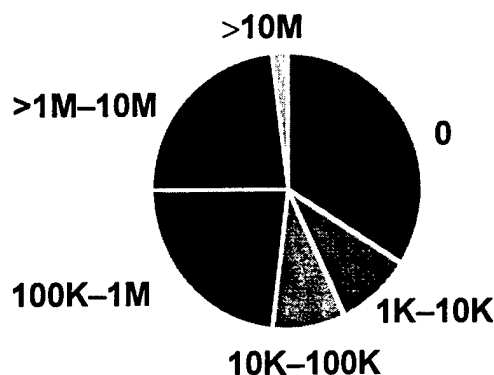
About two-thirds of plaintiffs whose claims reached verdict from 1993 to 2001 won an award, somewhat higher than the rate of plaintiff success nationally in all tort suits and substantially higher than the rate of plaintiff success in product liability suits in many metropolitan jurisdictions (Moller, 1996). Mesothelioma plaintiffs were most likely to be successful (75 percent won an award), but more than half of claims for conditions other than cancer and asbestosis were also successful.

Across the period, about half the plaintiffs' claims that reached verdicts were tried together with other claims, some in groups of two to five but a significant fraction in groups of six or more. In about 10 percent of all the trials that went to verdict, a single jury heard a dozen or more plaintiffs' claims. Moreover, the liability decisions reached in some group trials, including trials where juries heard a smaller number of claims, applied to hundreds, or thousands, of other claims. The prevalence of multi-plaintiff trials is highly unusual for product liability cases.

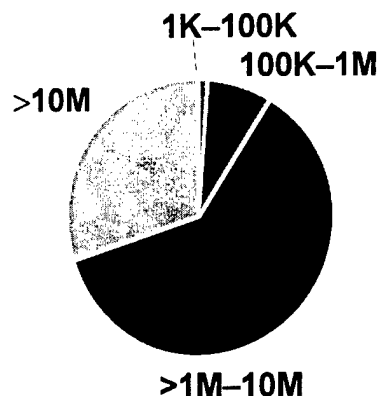


## Large Awards Accounted for More Than Half of All Dollars Awarded

Distribution of Awards (\$)



Distribution of Dollars



Source: RAND compilation

A3823-58 08/02 RAND

The mean verdict for successful plaintiff claims over the period was about \$1.8 million. During this period, mean product liability awards in some jurisdictions were considerably higher, while some were considerably lower (Moller, 1996). But mean awards varied substantially by disease category, from \$3.8 million for mesothelioma claims (higher than mean product liability awards in many metropolitan jurisdictions) to \$322 thousand for nonmalignant diseases other than asbestosis. The mean award for successful asbestosis claims topped \$1.6 million. The mean award for successful mesothelioma claims rose dramatically from about \$2 million in 1998 to upwards of \$6 million in 2001, while the mean award for successful asbestosis claims increased five-fold, from \$1 million in 1999 to \$5 million in 2001.

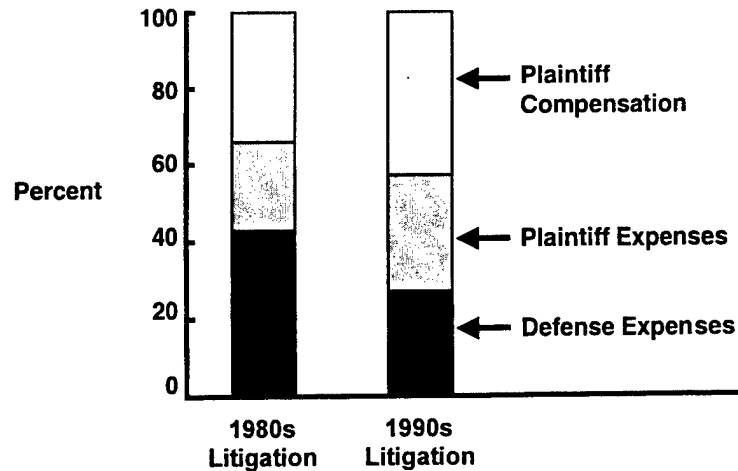
Just over half the plaintiffs whose claims reached verdict were awarded several hundred thousand dollars or more. About one-quarter of the successful plaintiffs were awarded in excess of a million dollars. As in most tort litigation, very large awards account for the lion's share of all the money awarded.

Not surprisingly, very large awards attract considerable attention. In August 2001, in what was described as the "largest asbestos verdict to date," a jury in El Paso, Texas awarded \$55.5 million, including \$15 million in punitive damages, against Kelly-Moore Paint Company to a mesothelioma victim and his family.

In September, a jury in Orange, Texas, awarded five workers with claims ranging from lung cancer to asbestosis \$130 million, including \$60 million punitive damages. In October, a Mississippi jury awarded \$150 million to six workers with asbestosis claims. Local media reported that “none [of the six plaintiffs] actually has asbestosis.” Even though very large awards may be reduced by remittitur or appeal, they reverberate through settlement negotiations and, importantly, through the stock market and investment analyst community.



## ***Transaction Costs Have Consumed More Than Half of Total Spending***



***And they are likely to go back up in next decade***

A3823-60 08/02 RAND

How much of the money that has been paid out in asbestos litigation was consumed by transaction costs—defense loss adjustment costs and plaintiffs' attorney fees and expenses—and how much went to injured parties? The earlier RAND study (Kakalik et al., 1983) concluded that injured parties ended up with 37 cents of every dollar spent in asbestos litigation.

However, the transactions costs associated with asbestos litigation soon grew as a fraction of total asbestos spending. The asbestos environment in the 1980s was highly litigious: Defendants disputed among themselves regarding responsibility for the asbestos at a site; defendants and insurers disputed over a host of coverage issues; and plaintiffs, defendants, and insurers vigorously disputed issues of causality, illness, etc. As a result, defense transactions costs increased and the share of total spending that claimants recovered net of their legal fees and expenses fell to about 34 percent of the total.

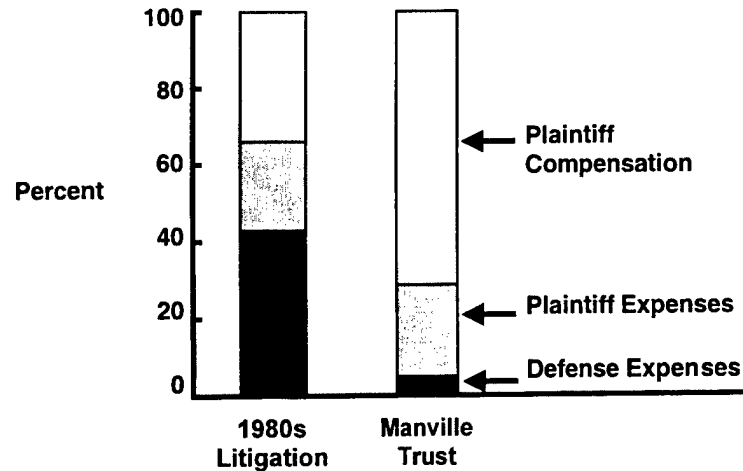
A number of these issues were essentially worked out in the late 1980s and early 1990s in the form of formal judicial decisions, agreements among defendants and insurers regarding joint defense efforts and coverage issues, and agreements between some plaintiffs' attorneys and defendants to settle claims according to a schedule of payments by claim type. These arrangements led to reduced defense litigation costs.

Using the same methods Kakalik et al. (1983) used in the earlier RAND study, we examined the data we obtained from defendants. We found that in the 1990s, a smaller fraction of what defendants spent on asbestos litigation went to defendants' and insurers' loss adjustment expenses. But the proportion of the money paid claimants that went to plaintiffs' attorneys remained the same. (Many of the people we interviewed said they had not seen any evidence that plaintiff attorneys' fees were reduced.) Consequently, the fraction of the dollars spent on asbestos litigation paid to claimants net of their legal fees and expenses increased in the 1990s, but claimants' net recovery of about 43 percent of total asbestos spending was still less than half the total.

Virtually all of our interview respondents discussed what they see as new instabilities in asbestos litigation. Many interviewees noted that the Center for Claims Resolution (CCR), the leading example of asbestos defendant cooperation, has ceased settling claims against its members. At the same time, interviewees told us, many defendants' agreements with plaintiff law firms were under reconsideration or being renegotiated. In particular, we have been told that a number of defendants are moving away from block settlements of large groups of claims and looking in more detail at individual claims on their merits. Plaintiff firms were said to be pursuing more adversarial strategies. And a number of those we interviewed believe that in response to the changing dynamics, there will be new insurance coverage battles. No one we interviewed offered us qualitative or quantitative information about changes in transaction costs resulting from these new sources of instability. But all of these factors have significant potential to influence transaction costs, and it seems likely that they will increase, at least temporarily, as a result. Because some of these issues may take several years to resolve, such a period of higher costs could be relatively long.



## ***But Transaction Costs of Bankruptcy Trusts Appear Low***



A3623-62 08/02 RAND

Once an asbestos defendant corporation is reorganized and a trust is established to assume its liabilities, claims processing procedures are largely administrative rather than adversarial. This should lead to dramatically lower transaction costs, and, in the case of the Manville Trust, experience confirms this intuition. From 1994 to 2000, the Manville Trust reported annual average operating expenses (not including special expenses associated with tobacco litigation) of about \$10 million, about 5 percent of the total dollars paid out to asbestos claimants plus expenses during this period. The Manville Trust also requires that attorneys representing claimants who file claims against it charge a fee of no more than 25 percent. Our interviewees report that attorneys generally adhere to that requirement. Assuming these expense ratios are correct, people who file claims against the Manville Trust receive about 70 percent of the total dollars spent by the Trust. However, it must be noted that the funds available to these trusts are limited. The money may be being paid in a much more efficient way, but the amount paid to any particular claimant is much less than would have been paid in litigation, given what other claimants are being paid for the same kinds of claims. Moreover, most trusts do not limit attorneys' fees.



## ***It Is Difficult to Determine What an Individual Claimant Receives***

- **Only plaintiffs and their attorneys know how much claimants receive (net)**
  - **Claimants receive money from multiple sources over long time periods**
  - **Defendants pay different amounts for same injuries**
  - **There are wide variations by jurisdiction**
  - **Most of the data are not public**
- **But some aggregate distributional data are available**

A3823-63 08/02 RAND

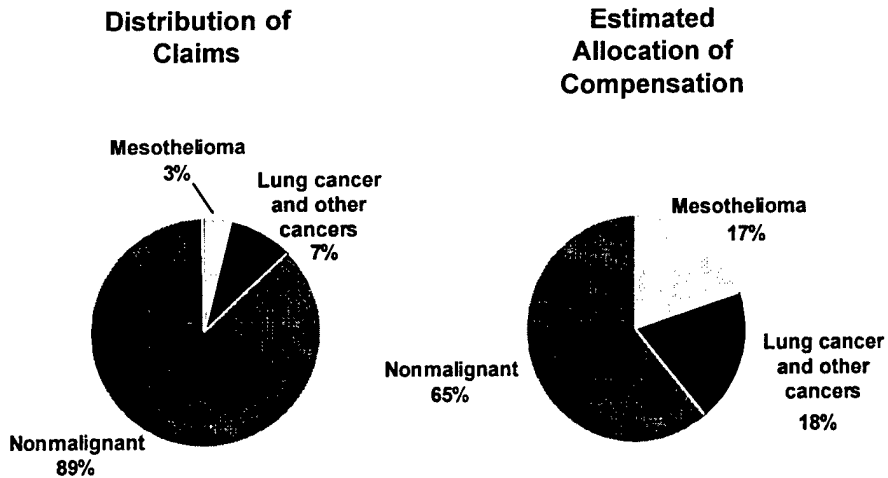
As noted above, we estimate that total spending on asbestos personal injury claims through 2000 was about \$54 billion. About \$33 billion, or 61 percent of the total, has been spent on defense and claimants' transactions costs. Claimants' net recovery has been about \$21 billion.

At this point we do not know what individual claimants receive, net of their attorneys' fees. Nor do we know how a claimant's net compensation varies with claimed injury. We have begun a follow-on study in which we will survey the defendants' and plaintiffs' attorneys for a sample of individual claimants to determine what the individual claimants actually received after paying their legal bills.





## ***Most Dollars Are Paid to Nonmalignant Claimants (1991–2000)***



A3823-64 08/02 RAND

As noted earlier, we combined the data we obtained from a number of major defendants to estimate the distribution of diseases among claimants. Because one or another of these defendants is named on the vast majority of asbestos claims, the distribution of claims by type against them is generally representative of the distribution of claims among all asbestos claimants. The pie chart on the left shows the distribution of claims by type over the period from 1991 to 2000.

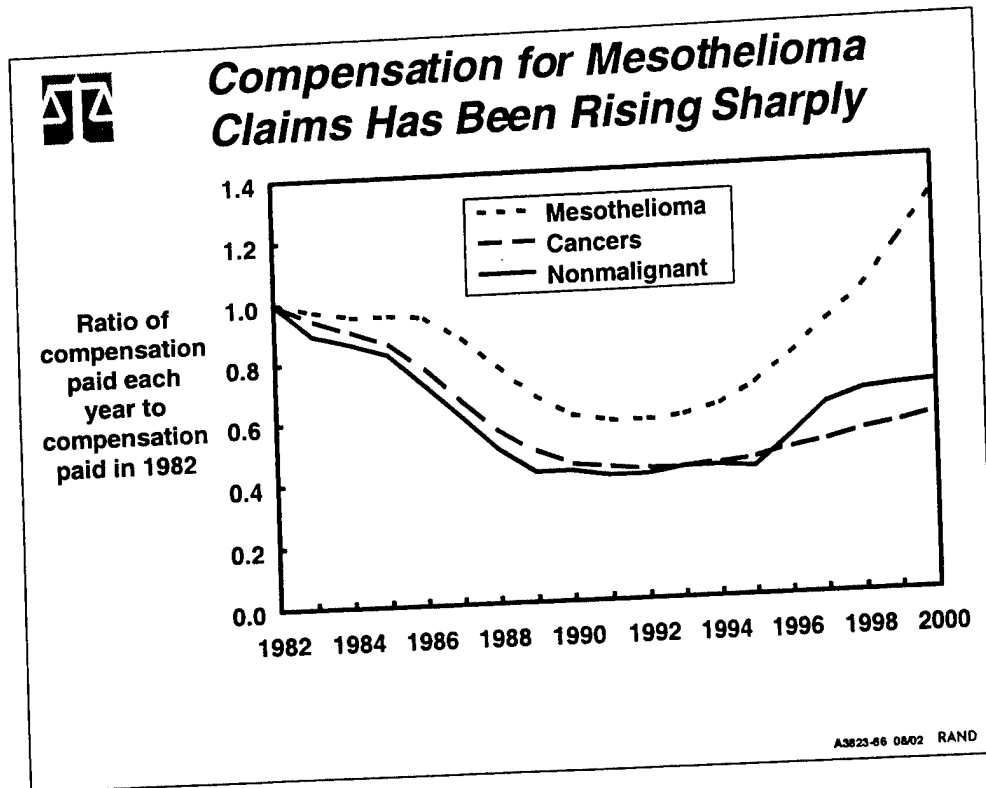
Generally, mesothelioma claims are paid the most, other malignancy claims an intermediate amount, and nonmalignant claims the least. For example, a defendant might pay three times as much for a mesothelioma claim as for a claim for another cancer and ten times as much for a mesothelioma claim as for a nonmalignant claim. The ratio of claim values by type apparently reflects perceptions of the relative trial values of such cases. The exact value paid for a particular case may also be influenced by the plaintiff's attorney (e.g., perceived litigation competence, risk aversion), the defendant (e.g., insurance availability, cash flow limits), and the jurisdiction of the case.

At a meeting of casualty actuaries in May 2001, analysts from Tillinghast-Towers Perrin presented estimates of the relative average compensation provided claimants across the country for mesothelioma, other cancer, and all nonmalignant claims combined from 1991 to 2000 (Angelina and Biggs, 2001). The estimates were developed using a sophisticated model for projecting potential asbestos bodily injury liabilities developed by Cross and Doucette (1997). Tillinghast-Towers Perrin provides actuarial services to a number of

clients regarding their potential asbestos liabilities. In the course of this work, they had access to sufficient data to estimate the ratios of claims payments by disease category. We applied their estimates of the relative compensation provided claimants with different conditions to the distribution of claimants by category (shown in the pie chart on the left) to estimate how the total amount provided to asbestos claimants to date has been divided among the categories. The results of these calculations are shown in the pie chart on the right

Mesothelioma claims accounted for about three percent of total claims and received about 17 percent of the dollars. About seven percent of claims over this period were for cancers other than mesothelioma; these claimants received about 19 percent of the dollars. Nonmalignant claims accounted for about 89 percent of claims and 65 percent of the dollars. These are averages over a nine-year period.

The Claims Resolution Management Corporation recently published the distribution of the Manville Trust's claims payments by disease category from 1995 through 2001. (Austern, 2002) Their experience over the last seven years has been almost identical to the results we obtained. Mesothelioma claims accounted for about four percent of the total claims paid by the Trust over that period. About 20 percent of the dollars paid by the Trust over that period went to Mesothelioma claimants. About eight percent of the Trust's claims over this period were for cancers other than mesothelioma; these claimants received about 16 percent of the dollars. Nonmalignant claims accounted for about 88 percent of claims and 64 percent of the dollars.



This chart shows the average amount that the defendants who provided data to us paid in compensation for each type of disease. Note that it shows what individual defendants paid in nominal dollars, on average, in each year relative to what they paid in 1982. The total amount any claimant received depends on the number of defendants who paid compensation to that claimant.

Defendants' average compensation payments for all types of claims declined through the 1980s, bottomed out in the early 1990s, and increased into the late 1990s. The amounts paid to mesothelioma claimants grew dramatically through the 1990s.

These results were confirmed in our interviews with participants in the litigation, including both plaintiff and defense attorneys. They told us that the ratio between mesothelioma and other injury claims for non-bankrupt defendants has widened considerably in the past few years. Moreover, some interviewees said that settlement values have increased substantially in particular jurisdictions, and they suggested that filing patterns have shifted over time, in part because of this trend. Taken together, these comments suggest that the relative sizes of different portions of the pie chart shown on the right in the previous slide could change substantially over time.



## ***Bankruptcies Affect Patterns of Compensation***

- **Current claimants lose**
  - Many get tiny fraction of agreed-upon losses
  - May take years for them to receive payments
- **Future claimants may gain**
  - Bankruptcy trusts have fiduciary responsibility to pay future claimants
- **Non-bankrupt firms become target of more litigation**

A3823-67 08/02 RAND

Bankruptcy has a decided effect on compensation patterns. During the bankruptcy process, claimants are not paid. And once a corporation emerges from bankruptcy reorganized and a trust established, significantly fewer dollars are available for claims and thus claimants are paid less. Because illness from asbestos exposure is characterized by long latency periods, it is likely that claimants will continue to come forward years into the future. The trusts are required to provide for future claimants and, consequently, are generally concerned about being sure there will be money for future claimants. The fact that many of the trusts pay only pennies on the dollar is one of the reasons why the litigation is spreading to greater numbers of defendants. If claimants cannot get adequate compensation from the former deep pockets, they must look for greater compensation from other defendants or pursue additional defendants.

The costs of bankruptcy for current claimants can be easily inferred from bankruptcy reorganization plans. These plans establish the amount due a claimant—in bankruptcy parlance, the “full liquidated value” of a claim—for each type of injury and then agree to pay some fraction of that value on each claim, typically a tiny fraction of its liquidated value. For example, the Manville Trust announced in July 2001 that in order to preserve the Trust’s resources to pay future claims, it would reduce the fraction of liquidated claim value it pays to 5 percent (Austern, 2001). Previously, the Trust had been paying claims at 10 percent of their liquidated value. Trusts typically pay lower than liquidated value on current claims in order to preserve funds for paying future claims.

We have collected information on the length of time from bankruptcy petition to confirmation of the reorganization plan for 11 major asbestos defendant bankruptcies. The average length of time from petition to confirmation for these 11 bankruptcies is six years, but three bankruptcies (National Gypsum, Keene, Rock Wool) took only three years and one (48 Insulations) took 10 years. However, these numbers do not accurately portray the length of time it has taken some corporations to move from bankruptcy petition to paying claimants. Johns-Manville filed its petition in 1982, which was finally approved six years later, in 1988 (Matter of Johns-Manville Corp., 68 B.R. 618 [Bankr. S.D.N.Y. 1986], *aff'd in part, rev'd in part*, Kane v. Johns-Manville Corp., 843 F.2d 636 [2<sup>nd</sup> Cir. 1988]). Payments began then but were suspended in 1990 (Smith, 1990) and did not resume again until 1995, 13 years after Manville's initial filing (in re Joint Eastern and Southern Districts Asbestos Litigation, 878 F. Supp. 473 [E.D.N.Y. 1995, *aff'd in part, vacated in part*, 78 F.3d 764] [1996]). The Amatex reorganization plan was confirmed eight years after filing of the petition, but the Amatex Trust did not become operational until six years after that, or 14 years from the time the petition was first filed.

Because bankruptcy stays litigation against the bankrupt corporation and many corporations have recently entered bankruptcy, a considerable sum of money for paying current asbestos claims has been "taken off the table." In response, plaintiff attorneys told us that they are asking non-bankrupt defendants to pay more money on claims filed against them than previously negotiated. In addition, some plaintiff attorneys are identifying new defendants in industries where workers have not previously come forward in great numbers to claim compensation for asbestos injuries. Some plaintiff attorneys are also developing new legal theories on which to base claims against defendants who may not have been sued previously for asbestos injuries. Defense counsel told us that their clients were faced with higher costs to resolve asbestos claims than they had anticipated. As a result, they said, some defendants would abandon previous settlement practices intended to avoid litigation costs and pursue more aggressive—and more expensive—litigation strategies.



## *What's Going on Today?*

	1982	Today
Number of claimants	21,000	600,000
Number of defendants	300	6,000
Total costs to date (nominal \$)	\$1 B	\$54 B
Bankruptcies	3	?
Estimated future costs (nominal \$)	\$38 B	?

A3823-69 08/02 RAND



## ***Dimensions of the Litigation***

- Claims
- Costs and compensation
- • Economic effects
- Future outlook

A3823-70 0802 RAND



## ***Bankruptcies Are Becoming More Frequent***

- **First three bankruptcies occurred in 1982**
- **13 more in the rest of the 1980s**
- **9 in the first half of the the 1990s**
- **9 in the second half of the 1990s**
- **22 since January 1, 2000**
- **4 dates to be determined**

A3823-71 08/02 RAND

The present and prospective future costs of asbestos litigation have led a substantial number of firms to file for bankruptcy. Sixteen corporations entered Chapter 11 because of asbestos litigation in the 1980s. Three of them filed in one year, 1982. The 1990s saw approximately the same number of Chapter 11 filings, 18, evenly spread over the decade in the sense that half occurred between 1990 and 1994 and the other half between 1995 and 1999. But asbestos bankruptcies then accelerated: There have been more filings since 2000, at least 22 through July 2002, than there were in either of the prior two decades. We are aware of another four asbestos-related bankruptcies for which we have not yet been able to identify the filing date.

Because corporations file petitions for bankruptcy and include their reasons for filing in these petitions, it is possible to determine the number of bankruptcies associated with asbestos litigation from public records. But published counts of the number of companies that have filed for bankruptcy as a result of asbestos litigation vary somewhat. A bankruptcy can involve a parent company and one or more of its subsidiaries, and some analysts count each entity separately in their total. Our tally, however, counts a parent and any of its subsidiaries as one bankruptcy. Furthermore, because the litigation has touched so many companies, there are asbestos defendant companies that have filed for bankruptcy for reasons unrelated to asbestos litigation. To the best of our knowledge, our tally includes only those companies for which asbestos litigation was the primary reason for filing.





## ***Costs of Bankruptcy Can Be Substantial***

- **Transaction costs of bankruptcy reorganization are generally about 3% of firm value**
- **Bankruptcy imposes other costs**
  - **Disrupts relationships with suppliers and customers**
  - **Impairs (or eliminates) access to credit**
  - **Distracts managers' attention**
- **After reorganization, the bankruptcy trust may hold all or most of the firm's equity**

A3823-72 08/02 RAND

There has been considerable previous research on the costs of bankruptcy reorganization (Franks and Touros, 1989; Weiss, 1990; White, 1996). This literature shows that the cost is equal to about three percent of a firm's value (defined as book value of debt plus market value of equity). But to date, no one has studied the costs of asbestos bankruptcy reorganization. The bankruptcies that have been studied involved large publicly traded corporations comparable in size to large asbestos defendant corporations. But reorganization costs for asbestos defendants may be higher than the three percent of firm value reported in these earlier studies because none of the studied bankruptcies included massive numbers of tort creditors.

Various other bankruptcy-related costs also impinge on a firm's ability to do business.

Finally, as noted earlier, those companies that have emerged from bankruptcy have emerged in the form of a reorganized company and a trust, the latter generally using essentially all of shareholders' value to pay off future claims. Bankruptcy is a very expensive proposition for shareholders.



## ***And Bankruptcy Is Only Part of the Story***

- Defendants' net payments to asbestos claimants weaken their financial position, cost jobs

- Upper-bound estimates of effects on defendants:

	<u>Today</u>	<u>Eventually</u>
Reduced level of investment	\$10 B	\$33 B
Jobs not created	138,000	423,000

- However, other firms' reactions may offset the overall effects on the economy

A3823-73 08/02 RAND

Moreover, bankruptcy is not the only economic effect of asbestos litigation. Some defendants that have not filed for bankruptcy have said that asbestos litigation has been a major drain on their resources. To finance investments in new plant and equipment, most firms first use their retained earnings. Only when firms have more good investment opportunities than they can finance from retained earnings do they turn to external sources of finance, such as loans or new equity issues. For asbestos defendants, each dollar paid out in defense costs and damage awards or settlements reduces retained earnings. As a result, these firms have fewer internal dollars available to finance investment. They may respond by reducing their investment levels, either limiting investment to what can be financed using retained earnings or, if they borrow externally, eliminating investments that are unattractive because of the higher cost of capital. Reductions in investment levels, in turn, can lead to reductions in the creation of new jobs. The point is that bankruptcy *per se* is not the only effect of asbestos litigation costs on the financial condition of defendant firms.

We can estimate the effects of asbestos litigation costs on defendant firms. These estimates are upper bounds of the effects on all firms; the true figures could be substantially lower. We earlier observed that we believe defendants have spent approximately \$23 billion on asbestos litigation. According to Fazzari, Hubbard & Petersen (1988), a \$1 dollar reduction in a firm's retained earnings will, on average, lead to a reduction of 42 cents in its investments. By this estimate, a reduction of \$23 billion in retained earnings would have caused these firms to

reduce their investment levels by up to \$10 billion. Tillinghast-Towers Perrin analysts have estimated that the total costs of asbestos litigation will eventually reach \$200 billion, of which asbestos defendants will pay 39 percent or \$78 billion (Angelina and Biggs, 2001). The Fazzari, et al. approach predicts a reduction in investment by asbestos defendants that will eventually amount to \$33 billion.

We can convert these predicted figures into estimates of the number of jobs asbestos defendant firms would have created had they not reduced their investments. The average capital-to-labor ratio in U.S. durable goods manufacturing is \$78,000. (This estimate is based on the value of the capital stock in durable goods manufacturing, which was \$861 billion in 1998, and the labor force in durable goods industries, which was 10,985,000 in 1999. The figure of \$78,000 for the average capital-to-labor ratio in durable goods manufacturing is the quotient (U.S. Department of the Census, 2000, Tables 684 and 888). If, on average, one less job is created each time a firm reduces its investment levels by \$78,000, the number of jobs not created because asbestos defendants spent \$10 billion less on investment up to the year 2000 would be approximately 128,000. Also, the number of jobs that defendants would have created if they had not had to reduce their capital investments by \$33 billion is estimated to be 423,000.

The money paid to asbestos claimants and attorneys does not disappear. They will likely save some of those funds. Their savings, in turn, will enter capital markets and become available to firms seeking investment funds. Thus, some of the funds removed from capital markets when retained earnings are used to compensate asbestos claimants return to those markets. Similarly, the number of jobs lost to the economy as a whole as a result of the adverse effect of asbestos litigation on defendants' investments could be at least partially offset by jobs created by firms that are able to make investments they could only afford because claimants and their attorneys saved some of the funds they obtained from defendants. Because it seems unlikely that claimants and attorneys will save or invest 42 percent of what they obtain from asbestos litigation, it would seem that the litigation will result in some reduction in investments and job creation. But we lack the data needed to estimate the impact of the litigation on the economy as a whole.



## ***What's Going on Today?***

	<b>1982</b>	<b>Today</b>
<b>Number of claimants</b>	<b>21,000</b>	<b>600,000</b>
<b>Number of defendants</b>	<b>300</b>	<b>6,000</b>
<hr/>		
<b>Total costs to date (nominal \$)</b>	<b>\$1 B</b>	<b>\$54 B</b>
<hr/>		
<b>Bankruptcies</b>	<b>3</b>	<b>60</b>
<hr/>		
<b>Estimated future costs (nominal \$)</b>	<b>\$38 B</b>	<b>?</b>

A3823-75 08/02 RAND



## ***Dimensions of the Litigation***

- **Claims**
- **Costs and compensation**
- **Economic effects**
- • **Future outlook**

A3623-76 08/02 RAND



## ***The Future Course of Litigation Is Uncertain***

- **Analysts' projections of total claimants and costs vary dramatically**
  - **Total claimants: 1 million to 3 million**
  - **Total costs: \$200 billion to \$265 billion**
- **Whether there will be money left to pay future claimants—and who will pay—remain open questions**

A3023-77 08/02 RAND

What might the future hold? The history of asbestos litigation has been characterized by failures to estimate its magnitude, scope, and evolution with any accuracy. For example, as noted above, RAND's report on the status of the litigation in 1982 (Kakalik, et al., 1983) observed that respected analysts were predicting that the future costs of asbestos litigation could reach \$38 billion. Among the participants in the litigation whom we have interviewed to date—most of whom have been involved in the litigation for more than a decade—there is no agreement about whether the litigation is approaching its end or will continue to grow or change in character.

Analysts' projections of the numbers of future claims and their likely costs also vary dramatically. Analysts at Tillinghast-Towers Perrin project an ultimate total of 1 million claims, costing defendants and insurers \$200 billion (Angelina and Biggs, 2001). Analysts at Milliman project a total of 1.1 million claims, but they estimate that the total costs of asbestos personal injury claims will reach \$265 billion (Bhagavatula, Moody & Russ, 2001).

The Manville Trust commissioned a deliberately high-side estimate designed to set an upper boundary on what would happen if everything turned out to be as bad as it could get. The estimate was 3 million total claimants, which means the process is only about one-fifth finished (Austern, June 21, 2001). The Trust did not attempt to estimate what the high estimate of the number of claimants would imply for the total costs of asbestos litigation.

The large variation in the projections of future claims and costs reflects recent changes in the litigation: sharp increases in both the numbers of claims filed and in the fraction of new claims submitted for nonmalignant conditions, particularly by unimpaired claimants, and rapidly rising costs of settling mesothelioma claims. There has also been a dramatic increase in the number of firms filing for Chapter 11. Analysts differ in their assumptions about the implications of these changes for the future course of the litigation.

However, the differences among these projections and the question of which is more likely to be accurate is not the important issue. The projections vary, but they do agree that the litigation is far from over. It is possible that millions of claims have yet to be made. We estimate that defendants and insurers have spent \$54 billion through the end of 2000 to compensate the 600,000 claimants who have come forward. Thus, these projections imply that we have seen only about half of the claims and roughly one-fourth to one-fifth of the eventual costs. Regardless of the differences among the various projections, they all suggest that, at best, only about half the final number of claimants have come forward and, possibly, only a fifth. As for total costs, the estimates suggest they will eventually amount to three to four times the money that has already been spent on the litigation. That is a staggering figure—\$145 to \$210 billion—and it raises the fundamental question of whether there is going to be enough money to pay future claims.



## ***Will There Be Enough Money for Future Claimants?***

<i>Example of Johns-Manville raises doubts</i>		Compensation as percent of liquidated value
<b>1988</b>	<b>Trust payments began</b>	<b>100%</b>
<b>1990</b>	<b>Payments suspended</b>	<b>(Only exigent cases paid)</b>
<b>1995</b>	<b>Payments resumed</b>	<b>10%</b>
<b>2001</b>	<b>Payment plan revised</b>	<b>5%</b>

A3823-79 08/02 RAND

Increases in claim filings and the recent surge of bankruptcies, combined with the failure of efforts to attain “global” settlements in the courts, have heightened some plaintiff attorneys’ concerns about the compensation prospects for future asbestos injury victims. In our interviews, attorneys who represent mesothelioma and other cancer victims were most prone to raise these concerns. The history of the litigation against the Johns-Manville Corporation and the Trust that was established as a result of its reorganization starkly illustrates the basis for this concern.

Johns-Manville filed for Chapter 11 in 1982. Its reorganization plan created a trust that would pay future claimants the compensation due them from the Johns-Manville Corporation (Matter of Johns-Manville Corp., 68 B.R. 618 [Bankr. S.D.N.Y. 1986], aff’d in part, rev’d in part, Kane v. Johns-Manville Corp., 843 F.2d 636 [2<sup>nd</sup> Cir. 1988]). The amount due a claimant, or its liquidated value, was determined by an administrative schedule (termed a “matrix”) established when the bankruptcy reorganization plan was approved. Under the reorganization plan, the Trust was to compensate all future claimants for 100 percent of the liquidated value of their claims against Johns-Manville. The Trust began to pay claims in 1988.

Within two years the Trust had paid out so much money that there were serious doubts about its future solvency (Smith, 1990). In 1990, Judge Jack Weinstein



ordered the Trust to cease payments to all but exigent cases, pending a review of its financial prospects. After extensive expert analyses, a new plan was drawn up under which the Trust was to pay all claims against Manville expected to arise thereafter, but at the much reduced rate of 10 cents on the dollar. In 1995, a new reorganization plan was approved by Judge Weinstein (in re Joint Eastern and Southern Districts Asbestos Litigation, 878 F. Supp. 473 [E.D.N.Y. 1995], *aff'd in part, vacated in part*, 78 F.3d 764 [1996]). Although appeals were pending, the Trust resumed payments to claimants at a rate of 10 percent of the liquidated value of the claims. Payments continued at this rate for six years.

Claims filed with the Manville Trust soared in the last half of 2000 and into the first half of 2001. As a result, demands on the Trust exceeded expectations and again threatened its long-term fiscal prospects. The Trust commissioned several different projections of likely future claim filings. Different consultants, each of whom has extensive previous experience in the asbestos arena, examined the trends in claims filings and the available epidemiological models. In a letter to Manville Trust claimants, the Trust's CEO noted that the consultants now predict that the Trust will receive 1.5 million additional claims and could possibly see as many as 2.5 million additional claims (Austern, 2001a). In July, 2001, after analyses of these recent filing trends, the CEO of the Trust announced that, pending resolution of any controversy concerning the amount of the pro rata share, the Trust would henceforth pay claims at the rate of 5 cents on the dollar (Austern, 2001b).

The Manville Trust's experience has been replicated in the other trusts established to provide asbestos claimants the compensation due them from a defendant who filed for bankruptcy. In 2001, the Eagle-Pitcher Trust paid claimants 15.5 percent of the liquidated value of their claims. The corresponding pro-rata payment ratios for the Celotex and UNR Trusts were 10 percent and 7.5 percent, respectively (Claims Resolution Management Corporation, 2001, p. 26).



## ***What's Going on Today?***

	1982	Today
Number of claimants	21,000	600,000
Number of defendants	300	6,000
<hr/>		
Total costs to date (nominal \$)	\$1 B	\$54 B
<hr/>		
Bankruptcies	3	60
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Estimated future costs (nominal \$)	\$38 B	\$145–\$210 B

A3823-81 08/02 RAND



## ***Outline***

- **How did we get here?**
- **Where are we today?**
- **Is there a better way?**

A3623-82 08/02 RAND

With the rapid growth in asbestos filings and costs, asbestos litigation has become a pressing policy concern. Many people question whether compensation is being divided among claimants fairly and in proportion to need, and whether responsibility for paying compensation is being allocated among defendants fairly and in proportion to culpability. Moreover, the current system is costly to administer, imposes substantial indirect costs on the economy, and may leave little or no funds available to pay future asbestos victims. Are there alternative strategies for compensating victims of asbestos disease that would be more effective, efficient, and equitable for all involved?



## ***Tort System Has Three Major Objectives***

- **Compensation**
- **Deterrence**
- **Individualized justice**

A3823-83 08/02 RAND

As a background for considering alternatives to the current asbestos litigation regime, we need to consider the theoretical rationale for continuing to rely on the tort liability system and empirical research on the tort liability process and outcomes. Traditionally, the tort system in the United States has been viewed as having three objectives: compensation, deterrence, and individualized corrective justice (e.g., Schwartz, 1997; Keating, 2000). In theory, the system properly calibrates defendants' incentives to avoid injuring others, properly compensates injury victims for their losses, and provides a sense that "justice has been done" through individualized consideration of each plaintiff's and defendant's situation.

However, empirical studies conducted by RAND and others over the past several decades have shown that the tort system often falls short of these goals (Hensler et al., 1991; Kakalik & Pace, 1986; Shanley & Peterson, 1983). It is often difficult for individuals with meritorious claims for minor injuries to find representation because their cases require a significant investment of time and expense and offer limited potential damages in return. Although plaintiffs with substantial injuries and viable claims are likely to find legal representation, their compensation may be limited by a variety of factors, including the defendant's ability to pay and both the plaintiff's and plaintiff attorney's risk aversion.

When cases are pursued to trial, juries may award damages that reflect their perceptions of defendants' resources in addition to their assessment of

defendants' culpability, or they may make judgments about causation that are scientifically questionable (Chin & Peterson, 1985; Ostrom et al., 1992 and 1996; Diamond, Saks & Landsman, 1998). And most litigants find little in the way of individualized treatment or procedure (Hensler, 1998).



## ***How Does Asbestos Compensation System Measure up?***

### ***Compensation***

- **Provides access to all claimants without regard to whether they are currently impaired**
- **But**
  - **Dilutes resources available to pay the most seriously impaired**
  - **Jeopardizes compensation of those who become impaired in the future**

A3823-85 0602 RAND

Ordinarily, only a small fraction of all those who are injured seek compensation from the courts (Hensler et al., 1991). Typically, the high costs of tort litigation screen out of the system the majority of claims for minor injuries and modest losses. In asbestos litigation, however, mass litigation strategies have effectively opened the courts to everyone who alleges that they were exposed to asbestos and incurred some injury, without regard to whether and to what degree they are functionally impaired and sometimes without much attention to the strength of their evidence of exposure.

Questions about the equity of the allocation of damages to different categories of asbestos claimants abound. It is widely asserted that plaintiff attorneys who represent plaintiffs with different levels of injury negotiate settlement agreements that “discount” the value of the most serious injury claims in exchange for receiving modest payments for large numbers of non-impaired plaintiffs with no functional impairments (Hensler et al., 1985). These practices were sharply criticized in the controversy over the proposed class settlements of future claims (*Amchem v. Windsor*, 521 U.S. 591 [1997]; *Ortiz v. Fibreboard Corp.* 527 U.S. 815 [1999]; Symposium, [1995]). Jury verdicts for cancer victims have risen sharply in the last few years, and attorney interview data suggest that settlement values for these most serious injury claims have increased in response. But aggregative practices continue (Hensler, 2002).

How to deal with future claimants has challenged litigators and jurists alike (Cole, 1999). Some believe that provisions should be made for those who will

come forward in the future with very serious asbestos injury claims by limiting payment to current claimants with legally cognizable injuries but no functional impairment. Others argue that it would be inappropriate to modify traditional tort doctrine for asbestos victims. With increasing numbers of bankruptcies, bankruptcy trusts have proliferated. Under a special provision of bankruptcy law (11 U.S.C. § 524[g]), the trusts deal with the issue of future claimants by paying everyone who files a claim the same proportion of their liquidated claim value, without regard to injury severity. As a result, those with the largest losses receive the same fractional compensation as those with very modest losses. As claims against the trusts mount, in some instances that fraction has become vanishingly small.



## ***How Does the Asbestos Compensation System Measure up?***

### ***Deterrence***

- **Forces culpable companies to pay large damages to injured workers**
- ***But***
  - **As litigation spreads, less culpable companies are drawn into process**

A3823-87 08/02 RAND

The historical case against asbestos manufacturers has been widely discussed in articles and books about the inception of the litigation (Brodeur, 1985; Castleman, 1996). Companies like Johns-Manville were central to this history, as were some of the other asbestos product manufacturers that were the prime targets of litigation through the 1980s. But as the litigation has spread to companies outside the asbestos and building products industries, the culpability of the defendants called upon to pay asbestos victims is in more dispute.

In this context, the issue is not *whether* asbestos victims should be able to receive compensation from some entity, but rather *what entity* should fairly be called upon to shoulder the financial burden. Requiring companies that played a relatively small role in exposing workers to asbestos to bear substantial costs of compensating for asbestos injuries not only raises fundamental questions of fairness but undercuts the deterrence objectives of the tort system. If business leaders believe that tort outcomes have little to do with their own behavior, then there is no reason for them to shape their behavior so as to minimize tort exposure.





## ***How Does the Asbestos Compensation System Measure up?***

### ***Individualized Justice***

- **In theory, provides individualized process through the tort system**
- ***But***
  - **In practice, mass processing allows little or no individual treatment**
  - **in court processes**
  - **in bankruptcy claims processes**

A3823-88 08/02 RAND

In principle, the tort system promises individualized justice to plaintiffs and defendants. Empirical research suggests that individualized treatment satisfies people's desire for procedural fairness, which in turn leads to trust in the justice system (Tyler, 1990). In practice, tort litigation often offers little individualized treatment in ordinary or mass litigation (Hensler, 1995 and 1998). In asbestos litigation, individualized process is a chimera.



## ***Policy Alternatives***

- **Maintain status quo**
- **Rely on bankruptcy system to deliver compensation and accept limits on payments**
- **Change substantive doctrine**
  - **Redefine “injury” to require some functional impairment**
  - **Limit liability in some circumstances**
- **Create administrative compensation program**

A3823-89 08/02 RAND

Notwithstanding the criticisms of our current asbestos litigation regime, many argue that it is the best feasible approach to assuring compensation for the thousands of workers who were injured as a result of exposure to asbestos. These supporters of the status quo argue that there are no other sources of compensation for injured workers on the horizon and that the corporations that are shouldering the financial burden of compensation benefited (along with their shareholders) from their past activities and are now properly called upon to pay the costs of those activities. Moreover, they say, changing substantive tort doctrine and procedural rules for asbestos injuries would be unfair to workers exposed to asbestos and set an unwise precedent for tort compensation generally.

Experience suggests that maintaining the status quo means assigning a substantial compensation role to bankruptcy trusts. The bankruptcy statute now provides for payment of future claimants under bankruptcy reorganization plans (11 U.S.C. § 524[g]), and the allocation of funds between current and future claimants is hotly negotiated during the bankruptcy reorganization process. Some commentators have suggested that policymakers should look to bankruptcy reorganization as the *main* vehicle for compensation for mass torts generally, and for asbestos in particular. By adopting streamlined claims processing procedures and, in some instances, limiting attorney fees, bankruptcy trusts have substantially reduced transaction costs for resolving asbestos claims. But these benefits come at a high price for asbestos plaintiffs, who typically

receive only a tiny fraction of their claim's litigation value and for investors whose equity often disappears entirely as a result of bankruptcy reorganization.

Critics of the current asbestos litigation regime have proposed a variety of changes in substantive doctrine and procedural rules to limit or reallocate compensation among injury victims or limit costs to defendants. For example, there have been proposals to limit compensation to those who currently demonstrate a significant functional impairment (while preserving others' right to sue in the future), to cap successor liability, to restrict the application of joint and several liability, and to cap punitive damages. There have also been proposals to eliminate or limit trial consolidations. All of these proposals implicate important normative values and many raise federalism questions.

Although the U.S. relies heavily on the tort liability system to compensate victims of accidental injury and disease, on several occasions Congress has adopted an administrative system to substitute for or supplement tort liability. The most recent example is the federal Victims' Compensation Fund for families of those killed in the September 11 terrorist attacks. Over the past several decades, numerous proposals to establish administrative schemes for asbestos victims have been introduced in Congress but none has garnered substantial support. We are continuing to analyze the various options for reform and will present the results of our analysis in our final report.



## ***Next Steps***

- **Complete/publish final report**
  - **Document analyses**
  - **Analyze policy alternatives**
- **Estimate individual claimants' recoveries**

A3823-01 08/02 RAND

The next step in the research is to complete and publish the final report on the project. Completion of the work will entail documenting in some detail the analyses we conducted to arrive at the results presented in this briefing. We will also analyze the policy alternatives listed in the previous box in terms of their likely effects on major stakeholders in the litigation.

We currently expect to complete the draft and submit it to reviewers before the end of the year. The published report will be distributed in early 2003.

We have already begun work on a follow-on study. We are developing estimates of the amounts individual claimants recover from all defendants. We will examine trends and patterns in claimants' recoveries according to their claimed injuries and the jurisdictions in which they pursued their claims.

## BIBLIOGRAPHY

Alleman, James and Brooke Mossman, "Asbestos Revisited," *Scientific American*, July 1997, pp. 70-75.

Altonji, Gerard, Karen Horvath, and Eric Simpson, *Asbestos Claims Surge Set to Dampen Earnings for Commercial Insurers*, Special Report, A.M. Best Company, Inc., Oldwick, NJ, May 7, 2001.

American Medical Association, *Guides to the Evaluation of Permanent Impairment*, Fifth Edition, 2000.

American Thoracic Society, "The Diagnosis of Nonmalignant Diseases Related to Asbestos: 1986 Update: Official Statement of the American Thoracic Society," *American Review of Respiratory Disease*, Vol. 134, 1986, pp. 363-368.

Anderson, H., et al., "Mesothelioma Among Employees With Likely Contact with In-Place Asbestos-Containing Building Materials," *Annals of the New York Academy of Sciences*, Vol. 643, 1991, pp. 550-571.

Angelina, Michael and Jennifer Biggs, *Asbestos Claims: Is This the Beginning or the End?* Casualty Actuaries of the Mid-Atlantic, Annual Conference, May 30, 2001.

Austern, David, *Memorandum to Manville Trust Claimants*, Claims Resolution Management Corporation, Fairfax, VA, June 21, 2001.

\_\_\_\_\_, *Memorandum to Attorneys Who File Manville Trust Claims*, Claims Resolution Management Corporation, Fairfax, VA, July 5, 2001.

\_\_\_\_\_, *The Manville Trust Experience, Mealey's Asbestos Bankruptcy Conference 2001*, Claims Resolution Management Corporation, Fairfax, VA, 2001.

\_\_\_\_\_, David, *Letter to Joseph F. Rice*, Claims Resolution Management Corporation, Fairfax, VA, August 20, 2002.

Banaie, A., et al., "Future Trends in Mortality of French Men from Mesothelioma," *Occupational and Environmental Medicine*, Vol. 57, Vol 7, 2000, pp. 488-94.

Baron, Fred, "An Asbestos Settlement with a Hidden Agenda," *Wall Street Journal*, May 6, 1993, p. A6.

Bernick, David M., et al., Debtors' Consolidated Reply in Support of Their Motion for Entry of Case Management Order, Establishment of a Bar Date, Approval of the Claim Forms and approval of the Notice Program, United States Bankruptcy Court for the District of Delaware, November 9, 2001.

Bernick, David M., et al., *Road map to B&W's defenses to asbestos personal injury claims*, United States district court for the Eastern district of Louisiana, October 18, 2001.

- Bhagavatula, Raji, Rebecca Moody, and Jason Russ, "Asbestos: A Moving Target," *Best's Review*, Vol. 102(5), September 2001, pp. 85-90.
- Brodeur, Paul, *Outrageous Misconduct: The Asbestos Industry On Trial*, New York, Pantheon, 1985.
- Cabraser, Elizabeth, Life After Amchem: The Class Struggle Continues, *Loyola Law Review*, Vol. 31, 1998, pp. 373-394.
- Castleman, Barry, *Asbestos: Medical And Legal Aspects*, 4<sup>th</sup> edition, Englewood Cliffs, NJ, *Aspen Law & Business*, 1996.
- Cauchon, Dennis, "The Asbestos Epidemic: An Emerging Catastrophe," *USA Today*, Feb. 8, 1999, pp. 1-7.
- Chambers, Letitia, "Where is the Asbestos Litigation Going?" *The Wall Street Forum: Asbestos*, Mealey Publications, New York, July 18, 2002.
- Chin, Audrey and Mark Peterson, *Deep Pockets, Empty Pockets: Who Wins In Cook County Jury Trials*, Santa Monica, CA, RAND, R-3249-ICJ, 1985.
- Claims Resolution Management Corporation, *Manville Personal Injury Settlement Trust: Selected Operations Data For Presentation at Courts Hearing*, Claims Resolution Management Corporation, Fairfax, VA, Dec. 13, 2001.
- Cole, G. Marcus, "A Calculus without Consent: Mass Tort Bankruptcies, Future Claimants, and the Problem of Third Party Non-Debtor 'Discharge,'" *Iowa Law Review*, Vol. 84, 1999, pp. 753-800.
- Cross, Susan and John Doucette, *Measurement of Asbestos Bodily Injury Liabilities*, Proceedings of the Casualty-Actuarial Society, Vol. 84, 1997, pp. 187-300.
- Daley, Christine and Jane Castle, *Distressed Digest: Special Asbestos Issue*, Lehman Brothers, November 28, 2000.
- Debtor's Consolidated Reply in Support of Their Motion for Entry of Case Management Order, Establishment of a Bar Date, Approval of the Claim Forms and Approval of the Notice Program, *In re W.R. Grace Co.*, Ch. 11 Case No. 01-01139 (Bankr. D. Del. filed April 2, 2001).
- Diamond, Shari, Michael Saks and Stephan Landsman, "Juror Judgments about Liability and Damages: Sources of Variability and Ways to Increase Consistency," *DePaul Law Review*, Vol. 48, 1998, pp. 301-353.
- Edley, Christopher F., Jr., and Paul C. Weiler, "Asbestos: A Multi-Billion Dollar Crisis," 30 *Harv.J.Legis.*, Vol. 30, Summer 1993, 383-408.
- Fazzari, S.M., R. G. Hubbard, and B.C. Petersen, *Financing Constraints and Corporate Investment*, Brookings Papers on Economic Activity, Number 1, 1988.

Fitzpatrick, Lawrence, The Center for Claims Resolution, *Law and Contemporary Problems*, Vol. 53, 1990, pp. 13-26.

Franks, Julian and Walter Torous, An Empirical Investigation of U.S. Firms in Reorganization, *Journal of Finance*, Vol. 44, 1989, pp. 747-69.

Green, Michael, *Bendectin and Birth Defects: The Challenges of Mass Toxic Substances Litigation*, Philadelphia: University of Pennsylvania Press, 1996.

Hensler, Deborah, "Fashioning a National Resolution of Asbestos Personal Injury Litigation: A Reply to Professor Brickman," *Cardozo Law Review*, Vol. 13, 1992, pp. 1967-1990.

\_\_\_\_\_, "A Glass Half Full, A Glass Half Empty: The Use of Alternative Dispute Resolution in Mass Personal Injury Litigation," *Texas Law Review*, Vol. 73, 1995, pp. 1587-1626.

\_\_\_\_\_, "The Real World of Tort Litigation," in Austin Sarat et al., eds., *Everyday Practices and Trouble Cases*, Evanston, IL, Northwestern University Press, 1998.

Hensler, Deborah, "The Role of Multi-Districting in Mass Tort Litigation: An Empirical Investigation," *Seton Hall Law Review*, Vol. 31(4), 2001, PP. 883-906.

\_\_\_\_\_, "Revisiting the Monster: New Myths and Realities of Class Action and Other Large-Scale Litigation," *Duke Journal of Comparative and International Law*, Vol. 11(2), 2001, pp.179-213.

\_\_\_\_\_, "As Time Goes By: Asbestos Litigation After Amchem and Ortiz," *Texas Law Review*, Vol. 80(7), 2002, pp. 1899-1924.

Hensler, Deborah and Mark Peterson, "Understanding Mass Personal Injury Litigation: A Socio-Legal Analysis," *Brooklyn Law Review*, Vol. 59, 1993, pp. 961-1064.

Hensler, Deborah, M. Susan Marquis, Allan F. Abrahamse, Sandra H. Berry, Patricia A. Ebener, Elizabeth Lewis, E. Allan Lind, Robert J. MacCoun, Willard G. Manning, Jeannette A. Rogowski, and Mary E. Vaiana, *Compensation for Accidental Injuries In The United States*, Santa Monica, CA, RAND, R-3999-HHS/ICJ, 1991.

Hensler, Deborah, Nicholas M. Pace, Bonnie Dombey-Moore, Elizabeth Giddens, Jennifer Gross, and Erik Moller, *Class Action Dilemmas: Pursuing Public Goals For Private Gain*, Santa Monica, CA, RAND, MR-969-ICJ, 2000.

Hensler, Deborah, William L.F. Felstiner, Molly Selvin and Patricia A. Ebener, *Asbestos in the Courts: The Challenge Of Mass Toxic Tort Litigation*, Santa Monica, CA, RAND, R-3324-ICJ, 1985.

Kakalik, James and Nicholas Pace, *Costs and Compensation Paid In Tort Litigation*, Santa Monica, CA, RAND, R-3391-ICJ, 1986.

Kakalik, James, Michael G. Shanley, William L. F. Felstiner, and Patricia A. Ebener, *Costs of Asbestos Litigation*, Santa Monica, CA, RAND, R-3042-ICJ, 1983.

- Kakalik, James, Patricia A. Ebener, William L. F. Felstiner, Gus W. Haggstrom, and Michael G. Shanley, *Variation in Asbestos Litigation Compensation And Expenses*, Santa Monica, CA, RAND, R-3132-ICJ, 1984.
- Keating, Gregory, "Distributive and Corrective Justice in the Tort Law of Accidents," *Southern California Law Review*, Vol. 74, 2000, 193-224.
- Kjaergaard, J., and M. Andersson, "Incidence Rates of Malignant Mesothelioma in Denmark and Predicted Future Numbers of Cases Among Men," *Scandinavian Journal of Work and Environmental Health*, Vol. 26(2), 2000, pp. 112-117.
- Lynch, Merrill, *Asbestos Panel Presentation*, Annual High Yield Conference, (Presentations by Andrew Berry, Joseph Cox, Robert Drain and Francine Rabinovitz), December 18, 2000.
- Magnani, C., et al., "Multicentric Study on Malignant Pleural Mesothelioma and Non-Occupational Exposure to Asbestos," *British Journal of Cancer*, Vol. 83(1), 2000, pp.104-111.
- Manville Personal Injury Settlement Trust, Claims Resolution Management Corporation, *Selected Operations Data for Presentation at Courts Hearing*, December 13, 2001.
- Manville Personal Injury Settlement Trust, *Financial Statements and Report for the period ending September 30, 2000, In re Johns Manville*, Andrews Asbestos LR, Document Section D, 2000.
- McGovern, Francis E., "Toward a Functional Approach for Managing Complex Litigation," *University of Chicago Law Review*, Vol. 53, 1986, pp. 440-493.
- \_\_\_\_\_, "Resolving Mature Mass Tort Litigation," *Boston University Law Review*, Vol. 69, 1989, pp. 659-694.
- \_\_\_\_\_, "Issues in Civil Procedure: Advancing The Dialogue. A Symposium: Resolving Mature Mass Tort Litigation," *Boston University Law Review*, Vol. 69, 1989, pp. 659- .
- \_\_\_\_\_, "Symposium: National Mass Tort Conference: An Analysis of Mass Torts for Judges," *73 Texas Law Review*, Vol. 73, 1995, pp. 1821- .
- \_\_\_\_\_, "Rethinking Cooperation Among Judges in Mass Tort Litigation," *UCLA Law Review*, Vol. 44, 1997, pp. 1851-1870.
- National Center for State Courts, *Examining the Work of State Courts, 2001*, Williamsburg: National Center for State Courts, 2001.
- Nicholson, William, et al., "Occupational Exposure to Asbestos: Population at Risk and Projected Mortality 1980-2030," *American Journal of Industrial Medicine*, Vol. 3, 1982, pp. 259-311.
- Ostrom, Brian, et al., "A Step Above Anecdote: A Profile of the Civil Jury in the 1990s," *Judicature*, Vol. 79, 1996, pp. 233-241.



- Ostrom, Brian, et al., "What Are Tort Awards Really Like? The Untold Story from the State Courts," *Law & Policy*, Vol. 14, 1992, pp. 77-106.
- Peterson, Mark and Molly Selvin, Mass Justice: "The Limited and Unlimited Power of Courts," *Law and Contemporary Problems*, Vol. 54(3), 1991, pp. 227-247.
- Peterson, Mark, "Giving Away Money: Comparative Comments on Claims Resolution Facilities," *Law and Contemporary Problems*, Vol. 53, 1990, pp. 113-136.
- Peto, J., et al., "The European Mesothelioma Epidemic," *British Journal of Cancer*, Vol. 79(304), 1999, pp. 666-672.
- Price, B., "Analysis of Current Trends in United States Mesothelioma," *American Journal of Epidemiology*, Vol. 145, 1997, pp. 211-218.
- Renner, Rebecca, "Asbestos in the Air," *Scientific American*, February 21, 2000.
- Rheingold, Paul, *Mass Tort Litigation*, Deerfield, IL, Clark, Boardman, Callaghan, 1996.
- Road Map to B&W's Defenses to Asbestos Personal-Injury Claims, *In re Babcock & Wilcox Co.*, 2001 U.S. Dist. LEXIS 16741 (E.D. La. 2001) (No. 00-0588), 2001.
- Rothstein, Paul F., "What Courts Can Do In the Face of the Never Ending Asbestos Crisis," *Mississippi Law Review*, Vol. 71(1), Fall 2001, pp. 1-34.
- Rourke, Daniel L., "1997 and 2000 Grace Asbestos PI Claims Sample Design, Methodology and Results," Appendix K, Debtors' Consolidated Reply in Support of their Motion for Entry of Case Management Order, Establishment of a Bar Date, Approval of the Claim Forms and Approval of the Notice Program, United States Bankruptcy Court for the District Of Delaware, November 9, 2001,
- Saks, Michael, and Peter Blanck, "Justice Improved: The Unrecognized Benefits of Aggregation and Sampling in the Trial of Mass Torts," *Stanford Law Review*, Vol. 44, 1992, pp. 815-.
- Schuck, Peter H., "The Worst Should Go First: Deferral Registries in Asbestos Litigation," *Judicature*, Vol. 75, 1992, pp. 318-328.
- Schwartz, Gary, "Mixed Theories of Tort Law: Affirming Both Deterrence and Corrective Justice," *Texas Law Review*, Vol. 75, 1997, pp. 1801-1834.
- Selikoff, I., E. Hammond and J. Churg, "Asbestos Exposure and Neoplasia," *Journal of the American Medical Association*, Vol. 188, April 1954, pp. 22-26.
- Selikoff, I., J. Churg, and E. Hammond, "The Occurrence of Asbestosis Among Insulation Workers in the United States," *Annals of the New York Academy of Sciences*, Vol. 132, 1965, pp. 139-155.
- Selikoff, Irving and Douglas Lee, *Asbestos and Disease*, New York, Academic Press, 1978.

- Selikoff, Irving, *Disability Compensation for Asbestos-Related Disease in the United States*, U.S. Department of Labor, June 1982.
- Selvin, Molly, and Larry Picus, *The Debate over Jury Performance: Observations from a Recent Asbestos Case*, RAND, Santa Monica, CA. 1987.
- Shanley, Michael and Mark A. Peterson, *Comparative Justice: Civil Jury Verdicts in San Francisco and Cook Counties, 1959-1980*, Santa Monica, CA, RAND, R-3006-ICJ, 1983.
- Smith, Marianna, "Resolving Asbestos Claims: The Manville Personal Injury Settlement Trust," *Law and Contemporary Problems*, Vol. 53, 1990, pp. 27-36.
- Sobol, Richard, *Bending the Law: The Story of the Dalkon Shield Bankruptcy*, Chicago: University of Chicago Press, 1991.
- Spirtas, R., "Malignant Mesothelioma: Attributable Risk of Asbestos Exposure," *Occupational and Environmental Medicine*, Vol. 51, 1994, pp. 804-811.
- Stallard, E., "Product Liability Forecasting for Asbestos-Related Personal Injury Claims: A Multidisciplinary Approach," Unpublished Manuscript. Copyright 2001 by the New York Academy of Sciences.
- Symposium, *Mass Torts: Serving Up Just Deserts*, Cornell University Law Review, Vol. 80, 1995.
- Trangsrud, Roger, "Mass Trials in Mass Tort Cases: A Dissent," *University of Illinois Law Review*, Vol. 1989, 1989, pp. 69- .
- Tweedale, Geoffrey, *Magic Mineral to Killer Dust: Turner and Newall and the Asbestos Hazard*, Oxford, Oxford University Press, 2000.
- Tyler, Tom, "A Psychological Perspective on the Settlement of Mass Tort Claims," *Law and Contemporary Problems*, Vol. 53, 1990, pp. 199-205.
- U.S. Department of the Census, 2000, *Statistical Abstract of the United States: The National Data Book, 120th edition, 2000*, Washington, DC.
- U.S. Environmental Protection Agency, *EPA Asbestos Materials Ban: Clarification*, May 18, 1999.
- Walker, A., et al., "Projections of Asbestos-Related Disease 1980-2009," *Journal of Occupational Medicine*, Vol. 25(5), 1983, pp. 409-425.
- Weinstein, Jack, *Individual Justice In Mass Tort Litigation: The Effect Of Class Actions, Consolidations and Other Multiparty Devices*, Evanston, IL, Northwestern University Press, 1995.
- Weiss, Lawrence, "Bankruptcy Resolution: Direct Costs and Violation of Priority of Claims," *Journal of Financial Economics*, Vol. 27, 1990, pp. 285-314.

White, Michelle, "Survey Evidence on Business Bankruptcy," in J. Bhandari and L. Weiss, eds., *Corporate Bankruptcy: Economic And Legal Perspective*, 1996.

Willing, Thomas, *Asbestos Case Management: Pretrial And Trial Procedures*, Washington, D.C., Federal Judicial Center, 1985.